

MINISTRY OF INTERIOR.  
—  
DEPARTMENT OF PUBLIC HEALTH.  
—

**Paper No. 2-1912.**



# ANNUAL REPORT

FOR

1911.



CAIRO:  
GOVERNMENT PRESS.

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*With the compliments  
of the Director General  
Department of Public Health*



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MINISTRY OF INTERIOR.

DEPARTMENT OF PUBLIC HEALTH.

ANNUAL REPORT FOR 1911.

PRELIMINARY.

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PRELIMINARY.

ORDINARY BUDGET.

The ordinary Budget (recurrent expenditure) was fixed at ... ..	L.E. 316,521
That for 1910 was ... ..	„ 301,514
Showing an increase of ... ..	L.E. 15,007
Which was distributed as follows :—	
i. Increase of personnel (pensionable) ... ..	L.E. 4,386
ii. Increase of personnel (non-pensionable) ... ..	„ 2,685
iii. Increase of hospital and general supplies and expenses ... ..	„ 6,788
iv. Automatic increase in Cairo Scavenging and Watering Service ... ..	„ 613
v. Upkeep of buildings ... ..	„ 895
	L.E. 15,367
Less reduction in grant for prophylactic measures ... ..	„ 360
	L.E. 15,007

The following table indicates in a general manner the credits allotted to the individual or correlated Services of the Department, and affords a comparison with the corresponding credits allotted in 1910 :—

	1911.	1910.
	L.E.	L.E.
A. Personnel :—		
1. Direction-General ... ..	22,217	20,873
2. Central Stores and attached Services... ..	5,211	5,145
3. Scientific Laboratories and Institutes ... ..	4,841	4,601
4. Ophthalmic Hospitals and Central Ophthalmic Office ... ..	5,399	4,967
5. Inspectorate of Pharmacies ... ..	1,572	1,428
6. Provincial Hospitals and Inspectorates ... ..	46,923	47,229
7. Provincial Barbers... ..	1,500	1,500
8. Cairo Inspectorate ... ..	10,353	10,170
9. Cairo Hospitals (including Lunatic Asylum) ... ..	23,875	19,339
10. Alexandria, Port Said, and Suez Hospitals ... ..	8,709	8,103
11. Veterinary Service... ..	13,058	13,232
B. Equipment ... ..	24,798	23,357
C. General supplies and diets ... ..	45,400	40,813
D. Travelling charges and allowances ... ..	9,683	9,069
E. Various indemnities and allowances ... ..	9,495	9,319
F. Free water fountains ... ..	3,278	3,278
G. Prophylactic measures ... ..	4,838	5,198
H. Repairs and maintenance of buildings ... ..	6,148	6,148
I. Sanitation of Mosques ... ..	2,500	2,500
J. General expenses : forage, rent, light, water, printing, postages, telegrams, telephones, etc. ... ..	17,598	16,733
K. Cairo Scavenging and Watering Service ... ..	49,125	48,512
TOTAL... ..	316,521	301,514

On this Budget, the total expenditure in 1911 was ... ..	L.E. 299,924
Showing an economy, which reverts to the State Treasury, of ... ..	L.E. 16,597



SPECIAL CREDITS.

ITEM.	Balance from 1910.	Credit 1911.	Total.	Expended 1911.
	L.E.	L.E.	L.E.	L.E.
Khanka Lunatic Asylum ... ..	27,879	...	27,879	24,704
Abbassia Lunatic Asylum ... ..	114	...	114	87
Second storey, Central Office ... ..	2,850	...	2,850	1,328
Rebuilding part of Central Stores ... ..	372	...	372	5
Filling-in Birkas ... ..	835	...	835	257
Transfer of Cemeteries ... ..	1,964	1,000	2,964	1,030
Alterations to Alexandria Hospital ... ..	713	...	713	128
Shellal Cattle Shed ... ..	820	...	820	784
Building Assiut Ophthalmic Hospital ... ..	2,239	...	2,239	1,638
Building and repairing Abattoirs ... ..	823	...	823	8
Building Tanta Ophthalmic Hospital... ..	272	...	272	272
Equipment for Assiut Ophthalmic Hospital ...	688	...	688	94
Infectious Diseases Hospital, Benha ... ..	382	...	382	109
„ „ „ Alexandria ... ..	9,120	...	9,120	...
Human Plague ... ..	}	52,000	52,000	30,652
Cattle Plague ... ..				8,107
Contribution to Quarantine Board ... ..				9,485
Building and equipping kitchen and washhouse. Alexandria Hospital ... ..	5,999	...	5,999	3,260
Building Ophthalmic Hospital, Mansura* ...	4,603	...	4,603	1,285
Instruments for Assiut General Hospital ... ..	264	...	264	...
Prophylactic Measures against Cholera ... ..	2,642	13,668	16,310	14,010
Building Ophthalmic Hospital, Beni Suef† ...	...	3,800	3,800	...
Enlargement, Benha Abattoir ... ..	...	232	232	...
Equipment, Beni Suef Ophthalmic Hospital ...	...	1,000	1,000	174
Sanitary Work, Abdin Barracks ... ..	...	252	252	218
Equipment, Mansura Ophthalmic Hospital ...	...	1,000	1,000	...
Latrines, Abbassia and Abu el Ela ... ..	...	1,220	1,220	237
Abbassia Lunatic Asylum ... ..	...	14,700	14,700	5,441
Abbassia Infectious Hospital (modifications) ...	...	7,900	7,900	505
„ „ „ (purchase of land) ... ..	...	6,737	6,737	6,737
Rebuilding part of Alexandria Hospital ... ..	...	700	700	491
Rebuilding Qena Hospital ... ..	...	10,300	10,300	...
Khanka Lunatic Asylum (supplementary work)	...	3,000	3,000	2,539
Initial Equipment, Khanka... ..	...	3,000	3,000	2,802
Building new Stores ... ..	...	4,000	4,000	2,178
TOTAL ... ..	...	...	...	118,565

\* Funds (L.E. 5,000) provided by Mohammad Badrawi Pasha.

† „ provided by public subscription.



## INTERNAL ADMINISTRATION AND ORGANIZATION.

It is with considerable satisfaction that I am able to report that some important steps have been taken for readjusting the organization of this Department for expediting business, for introducing more efficient management of its work in the provinces, and for improving the status and prospects of the Mudiria Inspectors—a body of men whose position and pay as the chief sanitary authorities in the Mudirias required fitting recognition.

The most important step as regards the Central Administration was the re-establishment of the Accounts Section, the temporary transfer of which to the Ministry of Interior had taken place in 1909. The Ministry of Finance appointed a committee to study the situation created by this change and finally it was decided to re-establish the Accounts Section under the immediate direction of an official of that Ministry accredited to the Direction-General—a step the success of which was assured from the first and which has been of the greatest value and assistance in the work of the Department.

Connected with the re-transfer of the Accounts Section just referred to, the re-establishment of the principle of direct correspondence with other Ministries and Departments was a matter of very great importance. This has also been arranged for, with a corresponding reduction in delay and the inevitable (under the previous system misunderstanding and mistranslation of technical matters which attended any correspondence with outside authorities, when conducted through a non-technical channel.

The previous reduction in Divisional Inspectors has also been rectified by the re-establishment of four posts, and though the contract system has been introduced instead of the “cadré” system in the case of the last recruits, the addition of these Divisional Inspectors\* in the provinces has done and will do much more (as they become trained to the conditions of the country and their special work) towards strengthening the Department in its operations against plague and other infectious diseases, as well as in dealing with the problems of village sanitation that are now being taken up. The importance of this step can hardly be exaggerated, for as was stated in a previous report (for 1909, p. 11), these officials have:—

1. To act in the provinces as the eyes and ears of the Central Administration; and
2. To perform the duties of instructors to the provincial and district officials of the Department, and sanitary advisers to the local administrative authorities.

This body exists in consequence of the peculiar circumstances of administration in Egypt; it does not form a definite link in the chain of decentralized action (since the Mudirias are in direct communication with the Central Administration), but the members are perhaps the hardest worked officials of the Department; they are called upon to act with promptness and consideration in a variety of trying circumstances, to exhibit much energy and forethought, more especially in the frequent emergencies that are inseparable from the prevalence of plague and other epidemic disease; they are required by the combination of tact, conciliation, and firmness, to secure the adherence of the local authorities and of the people to such measures as may be necessary, and altogether must be reckoned as the most important factor in promoting efficiency of sanitary and medical administration in this country.”

An additional bacteriologist of considerable experience (Dr. Petric, who had served on the Indian Plague Commission and in China and Manchuria) was also engaged for the special duty of working at practical plague problems which are continually arising in direct connection with the field-work of plague organization.

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\* The four Inspectors appointed are all officers of the R.A.M.C., *viz.*, Capt. Todd, and Messrs. Gale, Robb, and Gilmour.

Finally, some distinct step in advance has been taken for improving the pay and status of the Egyptian Mudiria Inspectors and those of the most deserving of the Markaz Medical Officers. This has been effected for the present by raising a class of L.E. 26–36 per month to one of L.E. 30–38, while the class of L.E. 18–24 has been raised to L.E. 24–28, and a certain proportion of the L.E. 12–16 class to a class of L.E. 18–22.

The internal organization of the Central Office has been somewhat modified during the year, and the lunacy work has been definitely organized in a Lunacy Section.

Some re-adjustment of duties in the Direction-General was made according to the following arrangement, and the work of the Department is now divided amongst the different sections as follows :—

*Deputy Director-General.*—Staff, authorizations, contracts, sanitary offices in Provinces and Governorates, Central Stores, Cairo City Service.

*Section A.*—Epidemics, ambulances, disinfection, rag trade, vaccination, pilgrims, supervision of passengers, *mulids*, legal questions, decrees and “*règlements*,” departmental orders, circulars, printed matter, municipalities, pharmacies.

*Section B.*—Unhealthy establishments, choice of sites for public buildings, cemeteries and removal of the dead, barbers, midwives, mosques, birkas, ezbas, enclosure of waste land, medico-legal reports, general sanitary questions not otherwise allotted.

*Section C.*—Hospitals, dispensaries, medical commission, local medical commissions and other questions of medical certificates delivered to Government employees, publications, library, journals.

The other Sections remain unchanged.

#### STAFF AND PERSONNEL.

The following tables give the establishment of the present staff and personnel of the Department :—

##### PERSONNEL “CLASSÉ” (PENSIONABLE).

CATEGORY.	1910.	1911.	CATEGORY.	1910.	1911.
Director-General... ..	1	1	<i>Brought forward</i> ...	303	318
Deputy Director-General ... ..	1	1	Veterinary Inspector, 1st class ...	1	1
Inspectors, 1st class (Directors of Sections) ... ..	4	4	“ “ 2nd class ...	3	3
Inspector, special class (M.O.H. Cairo)	1	1	“ “ 3rd class ...	5	5
Alienists, 1st class ... ..	1	2	“ “ 4th class ...	2	2
Alienist, 2nd class ... ..	1	1	“ “ 5th class ...	10	12
Inspectors, Divisional ... ..	10	8	“ “ 6th class ...	19	17
“ “ (Sub-Directors of Sections) ...	—	2	Chief Inspector, Scavenging and Watering Service ... ..	1	1
“ 2nd class ... ..	8	8	Inspectors, Scavenging and Watering Service ... ..	2	2
“ 3rd class ... ..	16	16	Assistant Inspector, Scavenging and Watering Service ... ..	1	1
“ 4th class ... ..	107	108	Inspector of “Vidange” (sewage removal) ... ..	1	1
Sanitary Engineer, 1st class ... ..	1	1	<b>Clerical Staff.</b>		
“ “ 2nd class ... ..	1	1	Secretary-General ... ..	1	1
“ “ 3rd class ... ..	1	1	Director of Service ... ..	1	1
Bacteriologist, 1st class ... ..	1	1	Sub-Directors of Service ... ..	3	3
“ “ 2nd class ... ..	3	3	Chefs de Bureau ... ..	2	2
Chemist ... ..	1	1	Sous-Chefs de Bureau ... ..	5	3
Medical Officers, 1st class ... ..	3	3	Employees, 1st class ... ..	7	7
“ “ 2nd class ... ..	3	3	“ 2nd class ... ..	18	18
“ “ 3rd class ... ..	8	10	“ 3rd class ... ..	32	32
“ “ 4th class ... ..	60	67	“ 4th class ... ..	115	121
Sages-femmes ... ..	49	51	Store-keepers, 1st class ... ..	2	3
Director of Stores ... ..	1	1	“ 2nd class ... ..	2	2
Pharmacist, 1st class ... ..	1	1	“ 3rd class ... ..	1	2
“ 2nd class ... ..	1	1	“ 4th class ... ..	4	5
“ 3rd class ... ..	5	5			
“ 4th class ... ..	14	14			
Assistant Pharmacists ... ..	—	2			
<i>Carried forward</i> ...	303	318	<b>TOTAL</b> ...	541	565



PERSONNEL “HORS CADRE” AND PAID ON SPECIAL CREDITS (NON-PENSIONABLE).

CATEGORY.	1910.	1911.	CATEGORY.	1910.	1911.
Medical Officers ... ..	28	30	<i>Brought forward</i> ...	790	794
Inspectors (Plague) ... ..	2	4	Laboratory Assistants, 1st class ...	2	2
Bacteriologist ... ..	—	1	“ “ 2nd “ ...	4	—
Veterinary Inspector ... ..	1	1	“ “ 3rd “ ...	1	5
Matrons ... ..	2	2	“ “ 4th “ ...	2	2
Nursing Sisters ... ..	22	19	Disinfectors, 1st class ... ..	10	10
Chief Attendants ... ..	66	77	“ 2nd “ ... ..	22	16
Male “ ... ..	400	437	Clerks ... ..	120	144
Female “ ... ..	155	164	Cooks ... ..	50	44
Sanitary Barbers ... ..	109	48	Printers ... ..	2	2
Electricians ... ..	2	3	Other employees and artisans of		
Assistant Electricians ... ..	2	4	various trades ... ..	853	908
Mechanics ... ..	1	4			
<i>Carried forward</i> ...	790	794	<i>TOTAL</i> ...	1,856	1,927







PART I.—MEDICAL ADMINISTRATION.

4.—GENERAL PROVISIONS FOR MEDICAL AID.

(i) GENERAL HOSPITALS.

The only new hospital construction undertaken in 1911 consisted in the provision of certain administrative buildings (*viz.*, kitchen, laundry, and necessary annexes) for Alexandria hospital as an instalment in the general scheme of gradual reconstruction now in course of being carried out. The number of beds available in the general hospitals, *viz.*, 2,385, therefore remained the same.

The following table shows the statistics as compared with 1910 :—

TABLE I.

	1910.	1911.
Number of hospitals ... ..	22	22
Number of beds ... ..	2,385*	2,385*
Number of in-patients treated ... ..	36,053	38,582
Of which voluntary patients ... ..	18,463	17,442
Number of days of treatment ... ..	579,796	621,350
Number of new out-patients ... ..	144,509	173,401
Number of out-patient attendances ... ..	353,409	385,062

Each bed was occupied on an average for 260·5 days during the year.

These figures, with the exception of those relating to “voluntary” cases admitted to hospital, show a continued extension of hospital work. As a rule, the “voluntary” cases and cases sent in by the Police have approximately balanced each other in recent years, but as there has been a diminution in the “voluntary” cases in the past year it would appear that the beds have been so largely occupied by “Police” cases as to lead to some exclusion of the “voluntary” cases ; this view is borne out by local inquiry.

The death-rate of in-patients was 6·29 per cent., as against 6·5 per cent. in 1910.

The presence of “public women” under treatment in the main blocks of some of the hospitals and in close contiguity to the wards for females is very objectionable, and in many cases prevents respectable women from seeking admission. It is very desirable that this state of affairs, which exists at Damietta, Benha, Shibin el Kom, Damanhur, Beni Suef, Fayum, Minia, Sohag, and Aswan, be remedied as soon as possible ; with this object in view, a modest programme of construction is now being prepared. It is also considered that with the adoption of recent improved methods of treatment (for the carrying out of which throughout the country arrangements are being made) the usual prolonged stay of these women in hospital will be largely curtailed, thus permitting of an economy in space and building as well as in maintenance.

The following is an extract from last year’s Report :—

“ One of the most important considerations in the provincial hospitals is the improvement of the nursing staff. An attempt has been made during the last three years to improve the male side of the service, without extra cost to the Government, by offering all vacant posts to trained men of good character who have passed from the medical corps of the army to the reserve. The posts, however, seem to have little or no attraction for these men, and the improvement effected by these means has been very slight, if any.”

\* Not including Lunatic Asylum.

This statement remains equally and, indeed, increasingly true at the present time, and it is probable that the situation is largely created by the fact that far higher pay is offered to this class of man by the Police and by the Prisons Department ; it becomes, therefore, largely a matter of market rates, and so, until the Department is able to offer better terms, it is only natural that the material will drift to other quarters, and the medical staff of the hospitals must continue to make the best of such material as they are able to attract. Some improvement has been effected in certain hospitals, *viz.*, Port Said, Assiut, and Aswan, by the employment of Sisters of the Religious Orders. (It is hoped to be able to extend this system where such Sisters are available, *e.g.*, Damietta and Tanta). It is true that much hospital work must still remain which, in this country, can only be done by men, but the presence of the Sisters in the hospitals ensures the proper feeding and attendance of the patients and results in a great increase in their well-being and comfort.

Out-patients Departments separated from the main portion of the hospitals are required at Minia and Fayum. It is hoped that the former, at least, may be built during 1913.

The Committee appointed in 1910 to consider the reconstruction of Kasrel Aini Hospital forwarded its report in May, 1911, to the Prime Minister, and subsequently the Council of Ministers commissioned the Director-General of the Department, the Director-General of the State Buildings Department, and the Director of Kasrel Aini Hospital, to visit a number of hospitals during the summer in Europe and Great Britain for the purpose of studying certain principles of arrangement and structure. The mission was carried out, but for the present the scheme remains in suspense to be brought forward again when the somewhat large funds required — moderately estimated at some L.E. 300,000 — may become available.

The following tables give detailed statistics for the various hospitals throughout the country :—

TABLE II.

PATIENTS.—NUMBER OF BEDS.—DAYS' TREATMENT.

LOCALITY.		YEAR.					
		1910.			1911.		
		Patients Treated.	Beds.	Days' Treatment.	Patients Treated.	Beds.	Days' Treatment.
Governorates	Cairo { Kasrel Aini... ..	9,666	614	187,528	9,656	666	184,923
	{ Lunatic Asylum...	1,922	1,007	450,410	870	1,007	479,975
	{ Infectious Hospital	841	165	18,043	1,128	178	22,967
	Alexandria ... ..	6,032	286	80,229	6,114	286	87,000
	Damietta ... ..	799	44	13,315	833	44	12,999
	Port Said ... ..	2,168	139	32,149	2,124	152	30,024
	Suez ... ..	1,075	100	19,561	1,375	120	17,466
Lower Egypt	Qaliub ... ..	818	34	10,731	836	34	11,131
	Benha ... ..	692	50	11,397	759	50	13,741
	Zagazig... ..	1,135	79	18,799	1,267	82	21,424
	Tanta ... ..	1,648	103	29,137	1,816	120	32,032
	Mansura ... ..	1,394	97	24,463	1,436	97	26,710
	Shibin el Kom ... ..	873	60	17,509	997	60	16,239
	Damanhur ... ..	1,132	61	17,018	1,024	66	16,497
	Mersa Matruh ... ..	126	14	1,728	129	16	1,401
Upper Egypt	Fayum ... ..	844	41	12,181	827	41	15,454
	Beni Suef ... ..	738	40	10,994	718	46	10,811
	Minia ... ..	995	51	12,672	1,130	51	15,991
	Assiut ... ..	1,973	136	28,678	2,295	131	32,443
	Sohag ... ..	857	50	15,088	1,016	50	16,080
	Qena ... ..	555	31	9,004	625	31	11,352
	Esna ... ..	264	25	3,366	485	25	5,961
	Aswan ... ..	440	39	6,206	428	39	7,704
TOTAL ... ..		36,987	3,266	1,030,206	37,888	3,392*	1,090,325

\* Not including ophthalmic hospitals.



TABLE III.

PATIENTS ADMITTED AND NUMBER OF BEDS.

HOSPITAL.								Voluntary Cases.	Police Cases.	Total Number of Cases.	Total Number of Days' Treatment.	Number of Beds.
Kasr el Aini	...	...	...	...	...	...	...	5,455	4,201	9,656	184,923	666
Alexandria...	...	...	...	...	...	...	...	2,138	3,976	6,114	87,000	286
Damietta	...	...	...	...	...	...	...	553	280	833	12,999	44
Port Said	...	...	...	...	...	...	...	1,562	562	2,124	30,024	152
Suez	...	...	...	...	...	...	...	1,160	215	1,375	17,466	120
Qaliub...	...	...	...	...	...	...	...	804	32	836	11,131	34
Benha	...	...	...	...	...	...	...	180	579	759	13,741	50
Zagazig	...	...	...	...	...	...	...	146	1,121	1,267	21,424	82
Tanta	...	...	...	...	...	...	...	930	886	1,816	32,032	120
Mansura	...	...	...	...	...	...	...	596	840	1,436	26,710	97
Shibin el Kom	...	...	...	...	...	...	...	236	761	997	16,239	60
Damanhur	...	...	...	...	...	...	...	384	640	1,024	16,497	66
Beni Suef	...	...	...	...	...	...	...	215	503	718	10,811	46
Fayum	...	...	...	...	...	...	...	311	516	827	15,454	41
Mersa Matruh	...	...	...	...	...	...	...	110	19	129	1,401	16
Minia	...	...	...	...	...	...	...	302	828	1,130	15,991	51
Assiut	...	...	...	...	...	...	...	765	1,530	2,295	32,443	131
Sohag	...	...	...	...	...	...	...	142	874	1,016	16,080	50
Qena	...	...	...	...	...	...	...	39	586	625	11,352	31
Esna	...	...	...	...	...	...	...	324	161	485	5,961	25
Aswan...	...	...	...	...	...	...	...	115	313	428	7,704	39
Infectious Hospitals...	...	...	...	...	...	...	...	975	153	1,128	22,967	178
TOTAL...								17,442	19,576	37,018	621,350	2,385
Lunatic Asylum	...	...	...	...	...	...	...	7	863	870	479,975	1,007
GRAND TOTAL...								17,449	20,439	37,888	1,090,325	3,392*

\* Not including ophthalmic hospitals.

TABLE IV.

IN-PATIENTS' DIVISION.

HOSPITAL.							ADMITTED.			DISCHARGED.			
							Remaining Last Year.	Admitted during the Year.	Total.	Cured.	Died.	Improved.	Remaining.
Kasr el Aini	...	...	...	...	...	...	503	9,656	10,159	5,585	887	3,207	480
Alexandria	...	...	...	...	...	...	233	6,114	6,347	3,692	446	1,992	217
Damietta	...	...	...	...	...	...	49	833	882	801	30	24	27
Port Said	...	...	...	...	...	...	84	2,124	2,208	1,280	69	797	62
Suez	...	...	...	...	...	...	37	1,375	1,412	1,173	66	125	48
Qaliub...	...	...	...	...	...	...	29	836	865	295	25	519	26
Benha	...	...	...	...	...	...	32	759	791	630	43	84	34
Zagazig	...	...	...	...	...	...	56	1,267	1,323	1,208	70	...	45
Tanta	...	...	...	...	...	...	77	1,816	1,893	1,480	113	212	88
Mansura	...	...	...	...	...	...	73	1,436	1,509	1,240	93	110	66
Shibin el Kom	...	...	...	...	...	...	36	997	1,033	830	63	94	46
Damanhur	...	...	...	...	...	...	45	1,024	1,069	722	65	248	34
Beni Suef	...	...	...	...	...	...	34	718	752	579	33	104	36
Fayum	...	...	...	...	...	...	41	827	868	727	28	65	48
Mersa Matruh	...	...	...	...	...	...	3	129	132	87	2	39	4
Minia	...	...	...	...	...	...	33	1,130	1,163	882	35	203	43
Assiut	...	...	...	...	...	...	86	2,295	2,381	1,894	89	320	78
Sohag	...	...	...	...	...	...	32	1,016	1,048	850	53	100	45
Qena	...	...	...	...	...	...	17	625	642	572	27	11	32
Esna	...	...	...	...	...	...	10	485	495	369	18	95	13
Aswan...	...	...	...	...	...	...	23	428	451	366	32	26	27
Infections Hospitals...	...	...	...	...	...	...	31	1,128	1,159	936	129	42	52
Total							1,564	37,018	38,582	26,195	2,416	8,417	1,551
Lunatic Asylum	...	...	...	...	...	...	1,304	870	2,174	139	160	548	1,327
GRAND TOTAL							2,868	37,888	40,756	26,337	2,576	8,965	2,878

TABLE V.

OUT-PATIENTS' DIVISION.

HOSPITAL.	Number of Patients.	Number of Attendances	HOSPITAL.	Number of Patients.	Number of Attendances
			<i>Brought forward</i> ...	134,839	284,905
Kasr el Aini ... ..	52,199	92,641	Damanhur ... ..	3,661	4,552
Alexandria ... ..	13,839	34,637	Beni Suef ... ..	5,274	23,430
Damietta ... ..	8,447	25,341	Fayum ... ..	6,932	12,988
Port Said... ..	20,545	27,645	Mersa Matruh ... ..	1,406	1,406
Suez ... ..	5,478	13,128	Minia ... ..	6,411	21,054
Qaliub ... ..	11,507	22,108	Assiut ... ..	6,275	12,208
Benha ... ..	2,520	9,369	Sohag ... ..	1,574	2,813
Zagazig ... ..	1,654	19,263	Qena ... ..	789	1,512
Tanta ... ..	5,735	17,270	Esna ... ..	4,646	15,348
Mansura ... ..	8,341	13,914	Aswan ... ..	1,594	4,846
Shibin el Kom ... ..	4,574	9,589			
<i>Carried forward</i> ...	134,839	284,905	TOTAL ...	173,401	385,062

(ii) INFECTIOUS HOSPITALS.

Considerable progress has been made in the programme for the development of the Abbassia (Cairo) infectious hospital. The building is completed of two blocks designed and fitted according to the most modern requirements for paying patients ; a sisters' house has been added, and two more blocks are about to be commenced.

With the pressure of cholera threatening the country from all sides during the spring and summer, preparations were also made by the erection of temporary huts for hospital and isolation purposes.

Similar preparation was also made at Alexandria, where owing to the occurrence of certain suspicious cases amongst passengers landing from infected countries, this provision proved of the utmost utility.

As regards permanent accommodation for infectious disease at Alexandria, the long-anticipated hospital still remains an accomplishment of the future, but plans have recently been prepared by the Municipality for a very complete installation, the land has been granted by the Government, and it remains only for the Municipality to vote the necessary credits in order that the engineers shall proceed with the work.

With regard, however, to the provincial towns, no proper accommodation for infectious diseases at present exists at Damietta, Zagazig, Mansura, Beni Suef, Fayum and Sohag, while at Assiut the building which has been used as an infectious hospital is about to be taken over by the Ministry of Interior for destruction and the subsequent building of a new Markaz on its site. This will necessitate the early provision of a new hospital for infectious diseases at Assiut : steps are being taken meanwhile to devise some means of supplying hospital accommodation for infectious cases in the other towns mentioned above.\*

\* The Provincial Council of Daqahlia has already voted money for an infectious hospital at Mansura, and the Municipality of Zagazig are endeavouring to assist in providing a site for a similar hospital for their own town (May 1912).



In the districts, the outbreaks of infectious disease can at present only be met by ambulances or tent hospitals. These are despatched from time to time from head-quarters stores or, in minor outbreaks, from the provincial store. During the year 1911 no less than 119 such ambulances were furnished, providing for 1,760 beds; these figures, however, do not include the provision made for plague measures.

TABLE VI.

INFECTIOUS DISEASES NOTIFIED BY THE MEDICAL OFFICERS OF THE AMBULANCE SERVICE.

	1910.				1911.			
	Existing.	Admitted.	Total.	Died.	Existing.	Admitted.	Total.	Died.
Smallpox ... ..	101	3,066	3,167	561	85	2,758	2,843	572
of whom in Infections Hospital, Cairo ...	2	34	36	6	2	22	24	3
Measles ... ..	24	7,435	7,459	3,553	112	8,382	8,494	4,380
of whom in Infections Hospital, Cairo ...	..	15	15	1	1	35	36	7
Diphtheria ... ..	11	656	667	327	8	625	633	329
of whom in Infectious Hospital, Cairo ...	..	40	40	24	2	86	88	35
Typhoid Fever ... ..	7	325	332	89	7	250	257	60
of whom in Infectious Hospital, Cairo ...	2	54	56	8	1	42	43	7
Typhus (Exanth.) ... ..	49	2,833	2,882	733	60	5,014	5,074	1,222
of whom in Infectious Hospital, Cairo ...	2	64	66	25	..	43	43	11
Relapsing Fever ... ..	2	926	928	43	12	534	546	55
of whom in Infections Hospital, Cairo ...	..	133	133	3	6	168	174	5
Plague ... ..	16	1,238	1,254	615	25	1,656	1,681	1,041
of whom in Infectious Hospital, Cairo ...	..	..	..	..	..	2*	2	2

\* 1 died out of hospital (from Quesna District, Menufia Province).  
1 died in hospital (from Qaliub District, Qaliubia Province).

TABLE VII.

LIST OF FEVER AMBULANCES ISSUED.

No. of Beds.	LOCALITY.	DISTRICT.	DATE OF ISSUE.
10	Qalinb ... ..	Qalinb ... ..	7 Jan. 1911.
20	Feteis ... ..	Kafr el Zayat ... ..	12 " "
20	Edshai ... ..	" ... ..	12 " "
20	Amrus ... ..	Tala ... ..	13 " "
15	El Hewaysat ... ..	Tanta ... ..	14 " "
20	Shubraris ... ..	Kafr el Zayat ... ..	17 " "
20	Tanta Prison ... ..	Tanta ... ..	25 " "
10	Abshish ... ..	Quesna ... ..	30 " "
10	El Angib ... ..	Ashmun ... ..	30 " "
10	Shubra Zengi ... ..	Menuf ... ..	31 " "
10	Mit Hebeish ... ..	Tanta ... ..	8 Feb. "
30	Mit Mahallet Damana ... ..	Mansura ... ..	15 " "
10	Nefia ... ..	Tanta ... ..	16 " "
20	Shubrabas ... ..	Shebin el Kom ... ..	17 " "
10	Sag ... ..	Basium ... ..	18 " "
10	Equa ... ..	Tala ... ..	18 " "
20	Kashtoukh ... ..	" ... ..	21 " "
20	Shubra Qibala ... ..	Quesna ... ..	25 " "
10	Tamalai ... ..	Menuf ... ..	28 " "
10	Ezbet el Makta ... ..	Abu Hommos ... ..	2 March "
10	Taranis el Bahr ... ..	Mansura ... ..	3 " "
20	Saft Gedam ... ..	Tala ... ..	13 " "
10	Kafr Rabia ... ..	" ... ..	17 " "
20	Talkha ... ..	Talkha ... ..	20 " "
20	Shubra el Namla ... ..	Tanta ... ..	21 " "
10	Edku ... ..	Rosetta ... ..	21 " "
10	El Delta ... ..	Delta Barrage ... ..	23 " "
20	Ezbet Khurshid ... ..	Damanhur ... ..	23 " "
10	Qallin ... ..	Kafr el Sheikh ... ..	31 " "
10	Bilkariora ... ..	Kafr el Dauwar ... ..	31 " "
15	El Namna ... ..	Belbeis ... ..	31 " "
15	El Adawi ... ..	Kafr el Zayat ... ..	1 April "
20	Ezbet Rostom ... ..	Abu Hommos ... ..	11 " "
10	" Walida ... ..	Delingat ... ..	11 " "
20	Qasr Nasr el Din ... ..	Kafr el Zayat ... ..	12 " "
10	Kom el Qanater ... ..	Abu Hommos ... ..	14 " "
20	Shabas ... ..	Desuq ... ..	15 " "
20	El Masara ... ..	Belqas ... ..	17 " "
10	Ezbet Lutfi ... ..	Kafr el Dauwar ... ..	19 " "
15	El Haddad ... ..	Kafr el Zayat ... ..	21 " "
15	El Brombib ... ..	El Saff ... ..	23 " "
20	Nabara ... ..	Talkha ... ..	27 " "
20	Zawiet Khoneiza ... ..	Kom Hamada ... ..	28 " "
25	Nagati ... ..	Shebin el Kom ... ..	29 " "
20	Nabara ... ..	Talkha ... ..	1 May "
20	Mit Um Saleh ... ..	Shebin el Kom ... ..	1 " "
20	Ariamun ... ..	Damanhur ... ..	1 " "
10	Abu el Matamir ... ..	Abu Hommos ... ..	2 " "
10	Genain ... ..	" ... ..	3 " "
40	Masagin el Ordi ... ..	Delta Barrage ... ..	4 " "
20	Kafr el Mahruq ... ..	Kafr el Zayat ... ..	5 " "
20	El Batanun ... ..	Shebin el Kom ... ..	10 " "
10	Saft Khaled ... ..	Itai el Barud ... ..	11 " "
10	Kafr el Agaiza ... ..	Shebin el Kom ... ..	14 " "
10	Delingat ... ..	Delingat ... ..	18 " "
10	Kafr Bata ... ..	Quesna ... ..	19 " "
10	Ezbet el Zeini ... ..	Abu Hommos ... ..	19 " "
30	El Angib ... ..	Ashmun ... ..	19 " "
20	Demeira ... ..	Talkha ... ..	22 " "
10	Salamun ... ..	Basium ... ..	22 " "
10	Hafs ... ..	Damanhur ... ..	24 " "
10	El Agaizy ... ..	Quesna ... ..	25 " "
10	Mit Bera ... ..	" ... ..	28 " "
10	Kafr el Sheikh Shehata ... ..	Tala ... ..	31 " "
10	Wasta ... ..	Wasta ... ..	1 June "
10	Amrin ... ..	Menuf ... ..	6 " "
10	Mein ... ..	Itai el Barud ... ..	7 " "
1,020	Carried forward.		

TABLE VII (continued).  
LIST OF FEVER AMBULANCES ISSUED.

No. of Beds.	LOCALITY.	DISTRICT.	DATE OF ISSUE.
1,020	<i>Brought forward.</i>		
10	Shubraris ... ..	Shubrakhit ... ..	7 June 1911.
20	Netna ... ..	Kom Hamada ... ..	13 " "
10	Shubraris ... ..	Shubrakhit ... ..	15 " "
10	Kamshish ... ..	Tala ... ..	20 " "
20	Mahallet Nasr ... ..	Shubrakhit ... ..	21 " "
10	Shubra Qibala ... ..	Quesna ... ..	25 " "
10	Mit el Wasta ... ..	" ... ..	25 " "
10	Kasr Boghdad ... ..	Tala ... ..	25 " "
10	Defra ... ..	Tanta ... ..	25 " "
10	Kafr el Hamam ... ..	Basiun ... ..	27 " "
20	Bandar el Mahmudia ... ..	El Atf ... ..	1 July "
10	Sebtas ... ..	Tanta ... ..	12 " "
20	Mahallet Marlhoum ... ..	" ... ..	15 " "
10	Ezbet Kism Sani ... ..	Itai el Barud ... ..	16 " "
20	El Adawi ... ..	Kafr el Zayat ... ..	17 " "
20	Kasr Nasr el Din ... ..	" ... ..	17 " "
20	Ezbet Mohsin ... ..	El Raml ... ..	7 Aug. "
20	El Khawalid ... ..	Itai el Barud ... ..	22 " "
20	Geziret el Zahab ... ..	Giza ... ..	28 " "
10	Mit Fares ... ..	Shebin el Kom ... ..	4 Sept. "
40	Siwa ... ..	Siwa ... ..	4 Oct. "
10	El Moltazamin ... ..	Damanhur ... ..	23 " "
10	Ashmant ... ..	Wasta ... ..	27 " "
10	El Amria ... ..	Mariut ... ..	2 Nov. "
10	Kafr Abu el Hasan ... ..	Quesna ... ..	10 Dec. "
1,390			

TABLE VII a.  
LIST OF SMALLPOX AMBULANCES ISSUED.

No. of Beds.	LOCALITY.	DISTRICT.	DATE OF ISSUE.
10	Ezbet Margas ... ..	Shubrakhit ... ..	4 Jan. 1911.
20	Beni Suef ... ..	Beni Suef ... ..	19 " "
10	Mit el Absi ... ..	Quesna ... ..	26 " "
10	El Mandara ... ..	Deirut ... ..	28 " "
20	El Angib ... ..	Shebin el Kom ... ..	29 " "
10	Bihidet el Haggara ... ..	Talkha ... ..	10 Feb. "
20	Ezbet el Taraka ... ..	Damanhur ... ..	22 " "
10	Itai el Barud ... ..	Itai el Barud ... ..	1 March "
10	El Eslab ... ..	Shubrakhit ... ..	17 " "
10	Ezbet el Nadawia ... ..	Kafr el Dauwar ... ..	1 April "
15	Mahallet Nasr ... ..	Shubrakhit ... ..	9 " "
10	Kafr Kishash ... ..	" ... ..	10 " "
20	Bimorkos ... ..	" ... ..	24 " "
10	Amlit ... ..	Itai el Barud ... ..	1 May "
10	Kafr el Sheikh Makhluf ... ..	" ... ..	10 " "
10	Sheshaa ... ..	Delta Barrage ... ..	14 " "
10	Sombat ... ..	Zifta ... ..	10 June "
10	Tarabina ... ..	Damanhur ... ..	15 " "
10	Kebelshan ... ..	Itai el Barud ... ..	22 " "
20	Ebrak Hamam ... ..	" ... ..	23 " "
20	El Didan ... ..	Shubrakhit ... ..	1 July "
10	Birket Ghattas ... ..	Abu Hommos ... ..	25 " "
10	Moradet Suliman ... ..	Itai el Barud ... ..	29 " "
10	Sakiet el Mankadi ... ..	Ashmun ... ..	5 Aug. "
20	Ezbet el Salanikh ... ..	Damanhur ... ..	7 Oct. "
10	Soufor ... ..	" ... ..	30 Nov. "
15	El Gamalia ... ..	Mansura ... ..	5 Dec. "
10	Meina ... ..	Itai el Barud ... ..	18 " "
10	Kafr el Hamar ... ..	Basiun ... ..	20 " "
370			



(iii) GOVERNMENT DISPENSARIES.

Reference was made in the report for 1910 to the completion of the programme which aimed at providing every district with means of procuring medical and surgical aid, and every medical officer with the means of practising his profession. The system adopted was devised in accordance with the observance of strict economy, and for that reason two classes of dispensary were established :—

(a) First scale, which was designed for and established in those district towns where no licensed pharmacy was in existence, and where therefore the Government dispensary was the only means of supplying medical necessities for rich or poor.

(b) Reduced scale, which was designed for and established in those district towns where one or more licensed pharmacies were in existence. This scale of dispensary is furnished with a simple equipment and all drugs and appliances which can be furnished gratis to the poor, as well as some drugs of a more expensive nature but which may be required in matters of urgency.

Of category (a) there are 46 in existence, while of category (b) there are 54.

The total number of persons receiving gratuitous relief from this source during 1911 was 27,721.

TABLE VIII.

OUT-PATIENTS TREATED GRATUITOUSLY IN GOVERNMENT DISPENSARIES.

DISPENSARY.	Number of Patients.	DISPENSARY.	Number of Patients.	DISPENSARY.	Number of Patients.
		<i>Brought forward...</i>	8,511	<i>Brought forward...</i>	22,463
Rosetta ... ..	710	El Saff ... ..	212	Baliana ... ..	709
El Atf ... ..	882	Biba ... ..	1,590	Basiun ... ..	28
Itai el Barud... ..	1,024	Sennures ... ..	234	Nag Hamadi ... ..	177
Delingat... ..	324	Itsa ... ..	302	Deshma ... ..	92
Shubrakhit ... ..	194	Beni Mazar ... ..	1,589	Qus ... ..	46
Baltim (Borollos) ... ..	234	Samalut ... ..	102	Qoseir ... ..	578
Delta Barrage ... ..	425	Abu Qurqas... ..	568	Edfu ... ..	738
Belqas ... ..	182	Wasta ... ..	1,918	El Derr... ..	98
Kafr el Sheikh ... ..	42	Deirut ... ..	2,744	Siwa Oasis ... ..	1,545
Fua ... ..	1,031	Manfalut ... ..	1,100	Baharia Oasis ... ..	174
Abu Hommos ... ..	56	Abnub ... ..	385	Dakhla Oasis ... ..	461
Santa ... ..	408	Abu Tig ... ..	746	Kharga Oasis ... ..	151
Quesna ... ..	264	El Badari ... ..	727	Menuf ... ..	160
Shebin el Kanatir... ..	37	Tema ... ..	144	Ashmun ... ..	301
Menzala ... ..	152	Akhmim ... ..	858		
Embaba ... ..	2,546	Girga ... ..	733		
<i>Carried forward...</i>	8,511	<i>Carried forward...</i>	22,463	TOTAL... ..	27,721

This figure is not a large one, but it must be remembered that the fellaheen still do not readily have recourse to medical advice unless they are brought forward by the Police in connection with accident or crime, or unless they are suffering from some serious incapacity; in village life every ordinary ailment has its reputed nostrum, and nearly every village its professional exploiter of a traditional “cure.”

In connection with Government dispensaries, the reflection naturally occurs that some reference should be made to the particular form of dispensary that has recently grown up for the special purpose of affording assistance to infants and advice to mothers. It is more convenient, however, to treat this question in connection with the protection of infant life, and it will therefore be found on page 51 *et seq.*



If to the work described under the foregoing sections (i, ii, and iii) is added also the very extensive sphere of labour covered by the ophthalmic hospitals and ambulances (*see* page 29) it will be gathered that a very considerable amount of medical aid is afforded to the people; but when every allowance is made for that fact there can be no manner of doubt that it falls far short of the aggregate of suffering and disease which calls for relief. The large towns are supplied with hospitals, the districts with dispensaries and ambulances, but in the villages, medical and sanitary aid is almost entirely lacking, for apart from the occasional visit of the district medical officer, who is commonly burdened with a charge of 50 to 70 villages and from 100,000 to 180,000 people, and the presence of an uneducated and frequently inefficient “barber,” the great mass of the fellaheen are seldom able to obtain at hand the simplest medical or surgical aid, with the result that much immediate suffering and loss of life, as well as future incapacity, remains the lot of those who form the greater part of the people of this country; while as regards the medical attendance of women in childbirth or otherwise it is rare for them (except in case of eye disease) to either require or receive the assistance of any one but the “daya” (midwife) of the village who, as a rule, is even more ignorant than the barber. Whatever progress has already been made, such a condition must still be a matter of regret and—remedy; not only for reasons of humanity but also for those of an economic order. It is by no means difficult to devise a programme which in theory may produce the much-required remedy, but if a programme is to be practical the first requirements are both money and time, together with considerable discretion in utilizing the material that is at hand and in manufacturing that which is to be produced from raw material not at present too promising.

Reference to Table IX will give some view of the problem which has to be met. This table indicates the field of duty of the markaz medical officers, showing markaz by markaz (arranged in Mudirias) the total number of villages, the number of inhabitants, and the number of villages of over 5,000 inhabitants which are those preferably selected for receiving the “hospital assistants” as these men become available after training. It will be seen, for instance, that in the Markaz of Dekernes there are 94 villages with more than 165,000 of population to receive medical aid; in the Markaz of Menuf there are 65 villages and more than 232,000 of population; in Kafr el Sheikh Markaz (a most scattered and wild district on the northern confines of Gharbia) there are 83 villages and nearly 144,000 of population; in Beni Suef Markaz there are 62 villages and more than 167,000 of population; while in the southern provinces, though the numbers of villages and of population are smaller there is there added the problem of greater distances and the more scanty means of transport.

These figures faithfully represent the enormous field which has to be considered and dealt with, and in connection therewith it must be remembered that for the people of the country, all real medical aid is practically of Government origin. Except in a few larger towns there are no private medical practitioners; with the exception of the Menshawi hospital at Tanta and Shawarby Pasha’s hospital at Qaliub there are at present no hospitals other than those maintained by Government or Provincial Councils; and therefore whatever success may in the future attend efforts to encourage private initiative in this direction, it must necessarily fall on the Government and the Provincial Councils to show the way.

It is manifest that a single medical officer cannot efficiently afford medical aid to such large populations as are indicated in the table under reference, and still less can he do so if his village subordinates (the barbers) remain of the ignorant and inefficient stamp which now characterises the majority, and if they can (as at present) readily escape control in the execution of their duties, which are mainly the carrying out of vaccination and the various minor operations of surgery, the examination of deaths in normal times and the furnishing of information connected with his office to the district authorities.





TABLE IX (continued).

Mudiria.				Markaz.						Population.	Total number of Villages.	Villages with 5,000 and over.
Giza	...	...	...	Giza	...	...	...	...	...	123,079	42	3
"	...	...	...	Embaba	...	...	...	...	...	156,493	53	6
"	...	...	...	El Ayat	...	...	...	...	...	99,811	49	2
"	...	...	...	El Saff	...	...	...	...	...	80,697	35	1
										460,080		
Fayum	...	...	...	Fayum	...	...	...	...	...	147,324	31	5
"	...	...	...	Sennures	...	...	...	...	...	150,821	44	10
"	...	...	...	Etsa	...	...	...	...	...	143,438	49	12
										441,583		
Beni Suef	...	...	...	Beni Suef	...	...	...	...	...	167,506	62	6
"	...	...	...	Biba	...	...	...	...	...	118,522	68	1
"	...	...	...	Wasta	...	...	...	...	...	86,384	43	2
										372,402		
Minia	...	...	...	Minia	...	...	...	...	...	124,718	37	4
"	...	...	...	Abu Qurqas	...	...	...	...	...	89,975	42	3
"	...	...	...	Samalut	...	...	...	...	...	105,191	46	3
"	...	...	...	Beni Mazar	...	...	...	...	...	131,570	50	3
"	...	...	...	Maghagha	...	...	...	...	...	112,905	52	4
"	...	...	...	El Fashn	...	...	...	...	...	88,835	37	2
"	...	...	...	Baharia Oasis	...	...	...	...	...	6,773	5	—
										659,967		
Assiut	...	...	...	Assiut	...	...	...	...	...	85,165	26	6
"	...	...	...	Abu Tig	...	...	...	...	...	134,479	36	9
"	...	...	...	El Badari	...	...	...	...	...	64,955	33	3
"	...	...	...	Abnub	...	...	...	...	...	94,718	37	4
"	...	...	...	Manfalut	...	...	...	...	...	132,164	49	7
"	...	...	...	Deirut	...	...	...	...	...	148,142	57	8
"	...	...	...	Mallawi	...	...	...	...	...	172,855	57	4
"	...	...	...	Dakhla Oasis	...	...	...	...	...	26,751	16	1
										859,229		
Girga	...	...	...	Sohag	...	...	...	...	...	159,080	51	6
"	...	...	...	Girga	...	...	...	...	...	197,625	61	7
"	...	...	...	Baliana	...	...	...	...	...	126,285	42	3
"	...	...	...	Tahta	...	...	...	...	...	221,767	64	9
"	...	...	...	Akhnim	...	...	...	...	...	88,214	28	3
										792,971		
Qena	...	...	...	Qena	...	...	...	...	...	126,542	22	10
"	...	...	...	Luxor	...	...	...	...	...	131,012	20	10
"	...	...	...	Qus	...	...	...	...	...	120,556	29	9
"	...	...	...	Deshna	...	...	...	...	...	109,527	16	9
"	...	...	...	Nag Hamadi	...	...	...	...	...	188,047	38	15
"	...	...	...	Esna	...	...	...	...	...	95,196	18	5
										770,880		
Aswan	...	...	...	Aswan	...	...	...	...	...	75,532	21	4
"	...	...	...	Edfu	...	...	...	...	...	99,705	17	12
"	...	...	...	Derr	...	...	...	...	...	57,576	36	—
										232,813		



The barber is not paid by the Government, but receives some consideration from his *clientèle*, and the realization of these considerations frequently depends on the goodwill of the *omda*. His interest is consequently closely identified with the wishes of the villagers and of the head man. His rôle in village life and his responsibilities to his patrons have by no means contributed to independence of character or to a sense of duty to the Government authority which appoints him, though it does not pay him. It is natural, therefore, that the rank and file of this class is of indifferent quality, and that the really good men (though some certainly exist) are few and far between.

It is probable that a programme based on the following lines would in due time effect an enormous improvement in the present conditions under which medical aid is available only to a limited proportion of the village dwellers :—

(1) Increase in the number of medical officers by allotting an extra number to the most populous and extensive districts. Some difficulty — apart from finance — would be encountered for the present, for the number of students issuing from the School of Medicine does not yet suffice to fill more than actual vacancies. (*See* Section vi, Medical Education).

(2) Training of a superior class of barbers and raising the successful candidates to the rank of “hospital assistant” who would gradually replace the present barber, at least in the larger villages.

(3) Provision of village “shelters” for reception of the sick from infectious disease.

(4) Institution of children’s dispensaries in the Mudiria towns which would treat children, teach mothers, and train the village “daya” to better ways.

The items of this programme will be referred to more fully in the sections under which they naturally fall, *viz.*, No. 1 on page 25; No. 2 on pages 46 and 112; No. 3 on page 113; and No. 4 on page 113.\*

#### (iv) PHARMACIES AND PHARMACY LAW.

Dr. Dinkler, Chief Inspector of Pharmacies, reports as follows :—

“ In last year’s report it was stated that there were 335 public pharmacies existing in Egypt at the end of 1910. This number has increased during 1911 to 354, showing a difference of 19. They are owned as follows :—

TABLE X.

PLACE.	Qualified Pharmacists.	Unqualified Proprietors.	TOTAL.
Cairo ... ..	72	72	144
Alexandria ... ..	39	33	72
Provinces ... ..	54	84	138
	165	189	354

“ The increase in 1910 was 16, of which 5 were qualified and 11 unqualified ; the increase in 1911 was 19, of which 1 was qualified, and 18 unqualified. Thus in the last two years five times as many unqualified persons as qualified pharmacists have established or bought pharmacies. This increase of the unqualified element in the profession is most undesirable, and illustrates the extreme necessity of the proposed

\* Some of the items, notably the last three, have now (May 1912) been taken up by certain of the Provincial Councils, who have recently shown a very laudable enthusiasm in endeavouring to meet suggestions.

new legislation. The overcrowding of pharmacies by unqualified proprietors is unjust to professional men, as these establishments seriously prejudice those belonging to qualified pharmacists, and this to the detriment of the general public, for there can be no doubt that the professional side of pharmacy is at its lowest point in pharmacies belonging to unqualified proprietors. The laboratory and *lege artis* dispensing, the testing of drugs, if done at all, is carried out with little care ; drugs are ordered only with regard to their cheapness and without reference to purity and efficacy ; scientific books remain unread, and, if read, are not understood ; reagents and analytical instruments are unfamiliar and therefore unused.

“192 recorded inspections were made, besides numerous flying inspections of the better-kept pharmacies and re-inspections of those already adversely reported on. The results were as follows : 80 per cent. of pharmacies belonging to qualified pharmacists were found satisfactory ; 65 per cent. of pharmacies belonging to unqualified proprietors were found satisfactory ; 20 per cent. of pharmacies belonging to qualified pharmacists and 35 per cent. of pharmacies belonging to unqualified proprietors were found unsatisfactory.

“In all cases the criticisms made either against the responsible manager or the proprietor were forwarded to them through the district medical officer. In this way an official form was given to all, even minor remarks, so that they can be neither denied nor forgotten, and at the same time the medical officer is acquainted with the defects found, which may thus be controlled by him. In general, it appears desirable that the medical officers should take a keener interest in this matter, a remark which applies specially to distant places. In many districts this is already the case.

“It is satisfactory to be able to record the fact that since the passing of the present law and the institution of a special inspectorate for its administration no serious accident has been reported ; it is probably due to the fact that pharmacists are well aware of being frequently open to inspection that has induced in them greater care and prevents them from relapsing into former faults. The efficacy of the inspections has, however, been to some extent lessened by the impossibility of testing rare and expensive drugs, or medicines containing them, which were bought by inspectors or agents, owing to the lamented death of the late Dr. Off, the analytical chemist of the Khedivial Laboratory, and the fact that it has not yet been possible to fill satisfactorily the vacant post.

“252 samples were taken, out of which 65 were found conform, and 25 were otherwise ; 14 warnings were issued and in 4 cases the offenders were proceeded against ; the remaining 144 samples were not examined.

“A total of 44 *procès-verbaux* were drawn up, of which 31 were against unqualified proprietors, and 13 against qualified pharmacists. Of the former, 15 have been dealt with and resulted in 1 acquittal and 13 sentences (1 case being filed), while 16 remain to be judged. Of the 13 accused qualified pharmacists, 8 were sentenced and 5 remain to be judged. Two pharmacies were closed by the tribunals.

“Infringements regarding the quality of drugs, although in most cases due to unqualified proprietors who order them and do not give their responsible managers the means of controlling them, result in the prosecution of the latter, as the law does not provide for action against unqualified proprietors. It is, however, of little use to proceed against such managers, who are under the necessity of earning their livelihood and living in peace with their employers, for if they resign the place, it does not lead to any improvement in the quality of drugs, and the employer readily finds a new manager to suit his purpose. It is interesting to add, also, that cases have occurred in which, when the manager has been punished, the proprietor (who is the real delinquent) discharged him on account of his stained reputation !



“As regards authorizations for the practice of pharmacy, 43 permits were granted to persons of the following nationalities: 12 Egyptian, 21 Ottoman, 5 Greek, 2 Italian, 1 Austrian, 1 British, and 1 American. The diplomas of these pharmacists emanated: 18 from Constantinople, 8 from Athens, 3 from Atlanta, U.S.A., 8 from the American College, Beirut, 2 from Damascus, 1 from Turin, 1 from Lausanne, 1 from Edinburgh, and 1 from Valparaiso.

“The School of Medicine, Kasr el Aini, did not deliver any diplomas in 1911. There exist 2 students in the second and 3 in the first year. Thus all vacancies which occurred in the Department during the year under report have had to be filled by candidates coming from other universities, and not possessing the Egyptian baccalaurate.

“About 250 assistant pharmacists have applied to be examined according to the law promulgated in November 1911, which comes into force in February 1912.

“*Sale of Poisons.*—The inspection of poison-sellers’ establishments did not reveal anything irregular, except one case at Mansura, where an unauthorized establishment selling poisons was closed by the tribunal on account of a *procès-verbal* drawn up by the Service. An inquiry by a Committee as to the unlawful sale of arsenic is now proceeding with a view to effecting some control; proposals tending to important restrictions are under discussion.”

As regards progress in the domain of pharmacy the following are the chief objectives now maintained in view :—

- 1.—The early promulgation of the proposed amendments to the Pharmacy Law ;
- 2.—The improvement of salaries of the Government pharmaceutical staff ;
- 3.—Modification of the regulations for opium and arsenic trade ;
- 4.—The employment of assistant pharmacists in Government hospitals.

#### (v) MEDICAL PRACTICE AND AUTHORIZATIONS.

Reference has been made in previous reports to the defects of the existing law in the practice of medicine and kindred professions. It has not yet been possible to amend those defects, but it is not improbable that some steps in the desired direction may be shortly taken ; a new draft law is now under consideration of the Department, and when it has reached the necessary stage will be forwarded to the legal authorities.

Meanwhile, one of the most pressing questions, *viz.*, the notification of infectious disease, has been dealt with by a persistent and vigorous prosecution of such offenders as are brought to light, and although the penalty is insignificant, this action has induced compliance in some of those who were previously the least inclined to afford such support as was in their power to the Department in one of its most important duties. The promulgation (now imminent) of the new law on infectious disease, will probably assist in promoting the object now under consideration.

The number of authorizations to practice issued during the year is shown below :—

TABLE XI.

PROFESSION.	NATIONALITY.											TOTAL.
	Local.	Ottoman.	British.	French.	Greek.	Italian.	German.	Austrian.	American.	Persian.	Russian.	
Medicine ... ..	32	18	9	4	17	1	6	1	1	3	...	92
Pharmacy ... ..	12	21	1	...	5	2	...	1	1	...	...	43
Veterinary ... ..	4	...	...	...	...	...	...	...	...	...	...	4
Midwifery ... ..	7	...	1	...	...	3	...	1	1	...	1	14
Dentistry ... ..	1	5	...	...	2	...	1	1	3	...	...	13



(vi) MEDICAL EDUCATION.

In the Report for 1909, reference was made to the fact that the Medical School of Kasr el Aini was the only source in Egypt from which a supply of medical men was to be obtained, a supply which was—and still is—far too scanty for the needs of the country. At a previous stage in the present report (p. 22) the outlines were sketched of a programme for extending the provisions of general medical assistance throughout the country; that scheme included the furnishing of additional medical officers to the various districts, beginning with those in which the extent, population and difficulty of access are most exaggerated. The present output of medical diplomates from Kasr el Aini School barely suffices to supply the annually recurring wastage, and therefore any additional posts which may be in the future created under the scheme in question will require to be filled by other means unless, as is hoped by the School authorities, the material now coming on should be able to supply a greater percentage of passes.

It is stated that the numbers now at the School represent the maximum which it can accommodate, and if the country is to be provided with an adequate number of medical practitioners, this fact presents a cogent argument for pressing forward to the nearest proximate date the re-building and extension of Kasr el Aini Hospital and the Medical School.

During the year 1911, the 37 students who entered in 1907 were due to acquire their diplomas. Of these, 8 left, 2 were dismissed, 1 died, 7 left to complete their studies in Europe, 13 remained in the School, and only 6 obtained diplomas.

The attached table affords interesting details concerning the past of the School students and prospects for the future. The entries in the years 1906 and 1907 had some relation to changes in the examination qualifying for entrance, and it is believed that as improvements have since taken place and that the material now in the School is of a superior class, some reasonable hope exists of obtaining a larger number of medical graduates in the immediate future.

TABLE XII.

Year.	Number passing Secondary Examination.	Number joining School of Medicine.	Left at Parents' Request.	Dismissed.	Died.	Transferred to other Higher Colleges.	Left to complete Studies in Europe.	Still in School.	Diplomas.
1902 ... ..	131	28	1	2	...	1	...	...	24
1903 ... ..	125	36	3	4	...	2	...	...	27
1904 ... ..	136	24	2	...	1	...	1	2	18
1905 ... ..	177	36	...	7	1	1	1	4	22
1906 ... ..	366	53	6	1	...	1	3	14	28
1907 ... ..	220	37	4	2	1	4	7	13	6
1908 ... ..	228	50	2	...	2	1	11	34	...
1909 ... ..	329	50	1	...	...	1	1	47	...
1910 ... ..	396	50	...	1	1	2	...	46	...
1911 ... ..	445	50	...	...	...	...	...	...	...

Before quitting the subject of medical education it will not be out of place to consider the question of foreign educational missions in so far as the medical section is concerned. Up to the present time, 11 such students, including 2 nominated by the Department of Public Health, have been sent to Europe under the conditions laid down by the Ministry of Education, conditions which may be regarded as specially liberal from the students' point of view. Of the 11 students sent :—

- 1 has re-joined the Department of Public Health;
- 1 has joined the Department of Public Health;
- 3 are at the Medical School (teachers of anatomy, physiology, and pathology), and
- 6 are still in Europe.

In connection with the Foreign Educational Missions (Medical Section) it may be permitted to draw attention to the fact that though the mission is specially designed for “qualifying for appointment on the teaching staff of the School of Medicine” it is a prominent factor of present conditions, and one which will inevitably force itself on the attention of the returning candidates, that the number of posts on the teaching staff (*i.e.*, the teaching of preliminary sciences such as Chemistry, Physiology, Biology, etc.) is extremely limited, and vacancies occur only at uncertain and often at indefinitely long intervals. It is probable, therefore, that in the event of such missions being continued, it would be prudent to make provision that candidates should be chosen not necessarily for future teaching purposes, but also on account of their seriously and practically profiting by the outlay which the State is prepared to make—such probability being gauged by their previous character and work—in connection with which this Department would probably be in the best position to pronounce. In a medical school the clinical and practical teaching (contrasted with that of the preliminary sciences already referred to) is undoubtedly best carried out by men of practical experience rather than by the trained theoretical teacher (who may have had little or no opportunity of putting the theory and teaching of others to practical test), and it is for this reason that a plea is put forward in favour of regarding the members of future missions in the light of future exponents of practice rather than of the theory of instruction: in which case they would probably find their most appropriate destiny in the posts of surgeon or physician to some of the larger hospitals other than Kasr el Aini alone, and thereby carry the results of their technical training into the provincial towns and districts.

#### (vii) SCHOOL OF PHARMACY.

The provision of an adequate corps of pharmacists for the needs of the country is a matter of considerable importance, and has given rise to considerable difficulty.

The School of Pharmacy was re-formed at Kasr el Aini in 1898, but for one reason or another it has not attracted a sufficiency of students, for, since the year 1885, no more than 41 entries have taken place, and of these 28 only were Egyptians and the remaining 13 foreigners of various nationalities.

The course required preliminary to the final examination for receiving the diploma is three years—two years at the School and one year in actual practical work, half at Kasr el Aini Hospital and half at a recognized pharmacy. The present position is that:—

1.—The supply of qualified pharmacists not only for service in the State Department but also in registered pharmacies, is too scanty for the requirements of the country.

2.—The larger proportion of pharmacists derive their qualifications from foreign schools because the diploma required by law in some of these schools is easier of acquisition than in the Egyptian School, and consequently,

3.—There is an extreme dearth of qualified Egyptian candidates for the posts under the State which according to regulation can only be filled by candidates of Egyptian nationality and in possession of an Egyptian diploma or its “equivalent,” the dearth being so marked that in this Department, of 13 vacancies in the last six years it has only been possible to fill 5 with candidates fulfilling the above conditions, while the others have of necessity been filled by foreigners or “non-equivalent” Egyptians by special sanction of the Council of Ministers.

An effort has recently been made to meet this deficiency by creating a class of regularly authorized “aide-pharmaciens” or dispensers (“compounders” they are called in the British Army and other services). This class, already in unauthorized existence, was recognised and legislated for by the Law No. 20, of 17th November 1911, which not only legalised the position of a class which has been automatically called into being by the mere force of circumstances, but also made arrangements for the future production of a further supply of the required class.



It is probable that the policy which recognizes and provides for the co-existence of these two classes is one which, combined with improving the prospects of the true pharmacist, will meet most economically and most practically the needs of the country. The higher duties and attainments of the scientific pharmacist, though not necessary in all branches of pharmaceutical science, must undoubtedly be maintained in a certain proportion of the personnel, and while it is undesirable to employ an educated and scientifically trained individual on the simpler and mechanical duties of a "compounder" it is necessary to recognize that these duties can be readily and efficiently performed by an individual who has gone through the more elementary training required for the "aide-pharmacien" or dispenser.

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## B.—SPECIAL DEPARTMENTS.

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### (i) LUNATIC ASYLUM AND ADMINISTRATION IN LUNACY.\*

The most important feature of interest in relation to lunacy in 1911 is the completion of the first instalment of the new Khanka Asylum. This, which in the present provides only for an establishment of 240 inmates, was handed over to the Department of Public Health by the Ministry of Public Works in December last, and Mr. H.W. Dudgeon, previously Assistant Director of Abbassia Asylum, was appointed Director of the new institution.

The inmates were drafted from the Abbassia Asylum in January 1912. This, the original institution of its kind, still remains, however, overcrowded. Its present establishment is 1,007 beds, but on the 31st of December the total inmates numbered 1,327, which is 320 in excess, representing overcrowding to the extent of nearly 32 per cent. as compared with 21·4 per cent. in 1909 and nearly 30 per cent. in 1910.

It is true that the transfer to Khanka of 240 lunatics reduces the over-establishment to 80 (*i.e.*, 7·9 per cent.) which is probably the smallest degree of overcrowding that has occurred for very many years, but Dr. Warnock foresees a gradually increasing demand for admission to Abbassia Asylum which appears to be substantiated by figures. The admission-rate in 1909 was 546, in 1910 it was 772, and in 1911, 870. It is probably safe to say that this figure will be reduced in 1912, though subsequent years may produce an increase which, in its turn, should be met by the gradual extension of Khanka Asylum in more or less the same proportion as the present programme, *viz.*, 120 to 160 beds in three or four sections per annum; until a total of some 1,000 to 1,200 beds is completed.

This is a modest programme, and one which should meet the requirements of the country, for, in the opinion of Dr. Warnock, lunacy itself is not on the increase, and the accommodation is needed more for the yearly "accumulations" than to meet a progressive increase in the normal number of new cases. In effect, the insane population in Egypt is a comparatively small one. If lunacy were prevalent in the same proportion to population as in the British Isles, it would be necessary to provide for some 30,000 insane, but in reality it is probable that barely one-tenth of that number require detention in this country. The main fact remains, however, that nearly 1,400 lunatics were safely housed in 1911.

The crimes attributed to lunatics or alleged lunatics formed but a small proportion of the total crime of the country, as will be seen from the following figures. The total number

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\* See also the special Report (Paper No. 3 of 1912) by Dr. Warnock, Director in Lunacy and of Abbassia Asylum.



of crimes for the year was 3,874, of which 98 were committed by alleged lunatics, amongst whom 50 were subsequently certified as insane. The table below sets forth the details :—

TABLE XIII.

CRIMES COMMITTED BY LUNATICS.

Nature of Crime or Misdemeanour.	Total Number of Crimes or Misdemeanours.	Number committed by Insane Persons.
Murder ... ..	824	11
Attempted murder ... ..	560	4
Cuts and injuries... ..	106	9
Robbery ... ..	902	16
Attempted robbery ... ..	20	0
Destruction of crops ... ..	154	0
Poisoning cattle ... ..	77	0
Arson ... ..	680	6
Rape ... ..	223	2 (attempted)
Forgery... ..	136	0
Corruption ... ..	14	0
Miscellaneous ... ..	178	2
	3,874	50

Although there was apparent overcrowding, this fact does not seem to have had any serious effect on the vital statistics of asylum population, for although the death-rate was 12·05 per cent. on “average number resident” and 7·3 per cent. on “total number treated” in 1911, as compared with 10·2 per cent. and 6·5 per cent. respectively in 1910, the variation may fairly be considered within the margin allowable for other contingent circumstances.

Owing largely to the energy and enthusiasm which Dr. Warnock has brought to bear on the problems concerned in the treatment of the insane, there is little doubt indeed that for an oriental country, lunatics are exceptionally well treated in Egypt, and such accommodation as exists and is in view for the immediate future may fairly be said to meet the requirements of the situation. In this connection it may be stated that no less than L.E. 188,000 have been devoted in the past seven years to the construction of buildings for housing and treatment of the insane.

The total admissions for the year were 870 cases, representing 803 different persons, of whom 59 were admitted on two or more occasions. Of these, 107 were suffering from pellagra, though it is not possible to state the actual relation of this disease to their mental condition; hashish is responsible for 82 admissions, alcohol for 31, syphilis for 38, adolescence for 38, and congenital defect for 42. These figures, together with 317 “cause unknown” represent the greater part of the admissions; but, as Dr. Warnock observes: “Many of the above-mentioned factors are not strictly speaking ‘causes’ but rather ‘conditions’ associated with mental disease.”

The new Lunacy Law referred to in preceding reports remains under study of the Ministry of Interior pending the consideration of certain somewhat vital points.

TABLE XIV.

GOVERNMENT HOSPITAL FOR THE INSANE, ABBASSIA (CAIRO).

CASES.										1910.	1911.
Existing	...	...	...	...	...	...	...	...	...	Males ... .. 832	923
										Females ... .. 318	381
										Total ... .. 1,150	1,304
Admissions, once or more	...	...	...	...	...	...				Males ... .. 538	673
										Females ... .. 234	197
										Total ... .. 772	870
Discharged...	...	...	...	...	...	...	...	...	...	Males ... .. 363	526
										Females ... .. 129	135
										Total ... .. 492	661
Died	...	...	...	...	...	...	...	...	...	Males ... .. 84	114
										Females ... .. 42	46
										Total ... .. 126	160
Remaining...	...	...	...	...	...	...	...	...	...	Males ... .. 923	934
										Females ... .. 381	393
										Total ... .. 1,304	1,327
Admitted more than once during the same year	...	...	...	...	...	...				35	59
Cases found not to be insane	...	...	...	...	...	...	...	...	...	16	26

TABLE XV.

ADMISSIONS TO GOVERNMENT HOSPITAL FOR THE INSANE, ABBASSIA (CAIRO).

PATIENTS COMING FROM:										1910.	1911.				
Governorates	...	...	...	...	...	...	...	...	...	{	Cairo ... ..	318	320		
											Alexandria ... ..	80	78		
											Port Said, Canal,				
											El Arish ... ..	20	16		
											Suez and Sinai ...	12	8		
Mudirias, Lower Egypt	...	...	...	...	...	...	...	...	...	{	Qaliubia ... ..	32	32		
											Sharqia ... ..	30	33		
											Gharbia ... ..	53	79		
											Dakahlia ... ..	25	49		
											Menufia ... ..	39	32		
											Behera ... ..	15	7		
Mudirias, Upper Egypt	...	...	...	...	...	...	...	...	...	{	Giza ... ..	13	29		
											Fayum ... ..	7	5		
											Beni Suef ... ..	10	11		
											Minia ... ..	17	21		
											Assiut ... ..	21	20		
											Girga ... ..	16	14		
											Qena ... ..	10	15		
Sudan	...	...	...	...	...	...	...	...	...	{	Aswan ... ..	2	6		
Total...											...	...	...	721	778

(ii) OPHTHALMIC HOSPITALS.

The general policy adopted in relation to Government ophthalmic work has been maintained during the year 1911, but with modifications which are the result of the recent establishment of Provincial Councils and of the increased interest taken by the people of Egypt in this particular department of medical assistance.



The two travelling hospitals originally founded and endowed by Sir Ernest Cassel have been at work at Fayum, Sohag, Aswan, Suez, Damanhur, and Zagazig. These hospitals remain for a fixed period of six months at each camping place, and it should be recognised that by this system and their agency public attention has been directed to the need of ophthalmic assistance throughout the country.

The establishment of permanent ophthalmic hospitals has received an accession in the opening of the new building at Assiut, which has been built by the Department of Public Health at a cost of some L.E. 11,000, of which, L.E. 5,000 was subscribed locally. The building is a fine one of the most modern design and is well equipped for the prosecution both of surgical work and clinical research. Some 10,000 patients have already applied for treatment since its opening in the earlier part of the year under report.

Other permanent hospitals will be opened during the present year (1912) at Mansura, Beni Suef, and Zagazig. That of Mansura is nearly completed, and in this case the greater part of the funds were provided by Mohammad Badrawi Pasha; for that of Beni Suef L.E. 4,000 were collected by public subscription: for that of Zagazig a similar sum was voted by the Provincial Council.

By the end of the year 1913, hospitals will be completed at Sohag, Shebin el Kom, and Damanhur. At Sohag the expenses of building the hospital will be defrayed out of a sum of L.E. 4,000 subscribed by the inhabitants of the province, the site being presented by Amin Bey Arif and his family: in the province of Menufia a sum of L.E. 5,000 collected by private subscription has been set apart for the erection of an ophthalmic hospital; in the province of Behera, the Provincial Council has assigned a sum of L.E. 5,000 for a similar purpose.

No further concrete proposals have as yet been made by local bodies to provide hospitals. In no case will more than one hospital per year be undertaken for maintenance by the Government, in 1914 and succeeding years, owing to financial exigencies.

The Provincial Council of Qena, which has a restricted income, intends to put aside a certain sum each year until sufficient money has been collected for building a hospital. The remaining provinces of Aswan, Minia, Fayum, Giza, and Qalubia are unprovided for as yet.

All future hospitals will be built according to a standard pattern, containing the minimum requirements for satisfactory work, at a cost of about L.E. 4,000 each.

Meanwhile, the problem of supplying similar hospitals or equivalent facilities for ophthalmic treatment are under study in the provinces of Aswan, Qena, and Qalubia. As regards Aswan, Mr. MacCallan writes as follows:—

“The long river frontage of Aswan province with its scanty strip of cultivation and population needs perhaps a somewhat different ophthalmic organization than other provinces. During my recent inspection of this province in company with the Inspector of the Ministry of Interior the suggestion was made by the Omda of Derr that a hospital dahabea should be built at the expense of the Provincial Council and maintained by the Government. This suggestion appears to be of value and merits consideration. Though the village of Abu Simbel in the south, and the town of Edfu in the north, separated as they are by a distance of 200 miles, would no doubt send a number of their inhabitants to a central hospital in the Mudiria town, it would be more convenient for the inhabitants of each district to be visited by a hospital dahabea. It is unlikely that the Aswan Provincial Council will ever feel able to support the annual charge of even one travelling hospital. The inclusive annual expense of a specially-built ophthalmic dahabea would certainly not be more than the expense of maintaining a permanent hospital (L.E. 1,500 a year). It is probable that the provision and equipment of a dahabea would cost about L.E. 2,000.”



With this proposal I am in full accord; for it certainly appears the most practical method at present for affording ophthalmic aid over this long area of riverside country.

The extension of further ophthalmic relief in the districts will take place, it is hoped, by means of special travelling hospitals costing about L.E. 1,000 per annum each. The province of Gharbia already maintains a travelling ophthalmic hospital of a similar organization to the Cassel Fund hospitals; this hospital is administered by this Department, but financial provision and control is effected by the Council. This movement has been so satisfactory to the Council that this body is now in course of organizing a second travelling hospital of the same type for service in the districts.

From these facts it is clear that the utility of ophthalmic work has appealed to the practical instincts both of public bodies and of private individuals in Egypt; and it is certain that a further development of the organization, which shall permit of persistent penetration into all quarters of the country, will meet with a favourable reception from the people and, it is believed, will result in lasting benefit to them.

Table XVI exhibits the development of ophthalmic hospitals since their inception in 1903. The year 1912 will see the opening of hospitals at Mansura, Beni Suef and Zagazig. In 1913, hospitals will be opened at Sohag, Shebin el Kom, and Damanhur. In 1914 Minia hospital, and in 1915 Fayum hospital will be opened. The Government is pledged to provide maintenance grants for the above-mentioned hospitals during the years specified. These hospitals are being built by the Government out of funds provided locally and already handed over to the Ministry of Finance.

TABLE XVI.  
OPHTHALMIC HOSPITALS IN 1913.

PERMANENT : MAINTAINED BY THE GOVERNMENT.				TRAVELLING : MAINTAINED OTHERWISE THAN BY THE GOVERNMENT.			
Functioning.	Under construction.	Money voted by Provincial Council.	Project accepted by Provincial Council.	Cassel Fund.		Provincial Councils.	
				No. 1	No. 2	Gharbia.	Assiut.
Tanta ... .. 1908	Sohag ... .. 1913	Minia ... .. 1914	Qena ... .. 1916	1903.	1904.	No. 1	No. 1
Assiut... .. 1911	Shebin el Kom 1913	Fayum... .. 1915				No. 2	1912.
Mansura ... 1912	Damanhur ... 1913					1911.	1912.
Beni Suef... 1912							
Zagazig ... 1912							

The ophthalmic Inspectors are at present two in number. They will be incapable of dealing with the increased work at the end of the present year, when five permanent and five travelling hospitals will be at work, while three new permanent hospitals will be in course of construction; it is also probable that several other Provincial Councils will demand assistance for the administration of travelling hospitals. The appointment of two new Inspectors from the beginning of 1913 will, I hope, be favourably considered. It will otherwise be impossible to maintain that standard of clinical efficiency which now obtains at the ophthalmic hospitals.

A complete course of post-graduate lectures is being delivered during the year at the various hospitals by Mr. MacCallan and the Inspectors. A course in clinical pathology and bacteriology will be instituted as soon as possible. Complete laboratory facilities for this important branch of ophthalmic surgery exist at Assiut and Tanta hospitals.

Ophthalmic treatment has been carried out on behalf of the Ministry of Education at Tanta School during the last four years, with considerable success.

The results shown by the statistics compiled by Mr. MacCallan present a sound practical argument in favour of extending ophthalmic work to all the rising generation with as great promptness as possible under the somewhat difficult conditions of obtaining and training a sufficient expert staff. On this question Mr. MacCallan writes as follows :—

“ 97 per cent. of the pupils exhibit signs of trachomatous conjunctivitis. Considerable improvement has been effected in the eyes of those pupils who were treated for this contagious disease. The treatment has been in the past voluntary, but the Ministry of Education has now authorized the exclusion from the school of those pupils who exhibit the disease in its more highly contagious stage, and better results may be expected. Opacities of the eye and resulting depreciation of vision caused by trachoma or acute ophthalmia in early life affected 55 per cent. of the pupils : this serious complication might have been prevented if ophthalmic treatment had been available.

“ Ophthalmic treatment was carried out during a period of three complete months at the Technical School at Damanhur. This was done at the request of the Mudir of Behera while the No. 2 Travelling Hospital was encamped at Damanhur.

“ The inspection of the state-aided “kuttabs” (elementary schools) at Tanta and Assiut is carried out every year.

“ The suggestion has frequently been made that eye-disease is less prevalent in the south of Egypt than it is in the north. My recent visit to Nubia enables me to contradict this statement. At one of the most southern villages of Aswan province—Feriq—I made an examination of the eyes of 30 pupils in a state-aided kuttab. All of them had trachoma, except five boys, one of whom was blind as the result of smallpox, three were suffering from chronic conjunctivitis (trachoma may or may not have been present in addition), leaving only one pupil with absolutely healthy eyes. One pupil was suffering from in-growing eyelashes (trichiasis) and was urgently in need of operation.”

An attempt is being made, as an experiment, in the province of Gharbia, to give such elementary instruction to the village barbers as will enable them to supply first aid to patients with acute ophthalmia and to advise them to go to the nearest ophthalmic hospital. This movement is, of course, combined with the general scheme for the improvement and instruction of village barbers, referred to on pages 46 and 112.

It is hoped that the kuttabs and the schools will shortly be supplied each with a suitable primer of ophthalmic hygiene, which has already been prepared by the Ministry of Education in co-operation with Mr. MacCallan.

It is of special interest to note amongst the statistics presented by the Ophthalmic Section that whereas the new patients treated in 1904 were somewhat less than 3,000, the number has gone through a progressive increase until in the year 1911 no less than 20,488 persons were afforded ophthalmic aid ; also, while the total attendances in 1904 were 15,000, they numbered in 1911 no less than 236,500.



TABLE XVII.

OPHTHALMIC HOSPITALS.

	1904.	1905.	1906.	1907.	1908.	1909.	1910.	1911.
<i>Hospitals in existence :—</i>								
1. Travelling... ..	1	2	2	2	2	2	2	3
2. Permanent ... ..	—	—	—	—	1	1	1	2
New patients treated ...	2,954	4,210	7,327	7,446	7,794	12,092	14,342	20,488
Total attendance of out- patients ... ..	15,039	50,680	94,204	146,830	132,278	177,761	190,247	236,411
Operations performed ...	1,282	2,480	5,846	6,794	6,426	9,930	11,486	14,322
<i>Details :—</i>								
Patients examined ... ..					19,614	22,373	25,514	31,274
Patients regularly treated ... ..					7,794	12,092	14,342	20,488
Incurable cases ... ..					4,550	2,302	1,776	2,620
Blind in one eye... ..					1,189	2,116	2,438	3,196
Blind in both eyes ... ..					852	1,385	3,010	2,811
Trichiasis cases examined... ..					8,159	10,060	7,507	7,871
„ „ operated on and cured ... ..					2,262	3,128	2,022	3,933
<i>New patients treated per age :—</i>								
Under 1 year ... ..					247	516	457	761
From 1 to 5 years ... ..					585	1,645	1,497	1,903
„ 6 „ 10 „ ... ..					902	1,442	4,469	2,101
„ 11 „ 15 „ ... ..					849	1,294	1,475	2,051
„ 16 „ 20 „ ... ..					829	1,156	1,499	2,067
„ 21 „ 40 „ ... ..					2,584	3,775	4,845	6,116
41 and over ... ..					1,798	2,206	3,100	5,589

It is of interest to note that one-third of all patients seen were under the age of ten years.



It is noteworthy that 1,036 patients seen had submitted to operation by unqualified persons without success, and in many cases with disastrous results to their sight. The men who practise this operation are frequently the village barbers. It has hitherto been found impossible to bring any of these practitioners to justice ; but with the advent of some improvement in village sanitary organization it is felt that some more efficient control will be effected.

An ophthalmic chapter for a book on hygiene has been prepared at the request of the Ministry of Education. The book will be used, I understand, only at the Normal Schools for men and women teachers. The ophthalmic chapter is of an elementary and useful nature and merits a less restricted field. It was written under the impression that it would be used in Primary or Secondary Schools as well as at Normal Schools.

A short pamphlet of a practical nature has been prepared and is being distributed at various centres. It contains such information on the subject of ocular hygiene as is likely to be of use to the fellah.

A monograph on trachoma and Egyptian ophthalmia has been completed and will be published as soon as it has been revised.

A manual of ophthalmic surgery suitable for the use of the average general practitioner in Egypt is in course of preparation ; no such book is in existence at the present time, and it should fulfil an urgent want.

Applications for description of the ophthalmic organization in Egypt have been received from the Governments of Australia and the Sudan, also from the British Consul-General in Tunis. The Government of Japan ordered the translation into Japanese of Mr. MacCallan's communication to the British Medical Association Annual Meeting in 1910 on the same subject, and its distribution to all Government medical officers.

The following publications have been issued by the ophthalmic branch of this Department :—

1. "Four Years Work with the Ophthalmic Hospitals in Egypt." (Published in English and Arabic). Read at Annual Meeting of the British Medical Association, August 2, 1907. (Out of print.)
2. "Ophthalmic Conditions in the Government Schools in Egypt and their Amelioration." (Published in English). *Ophthalmoscope*, September 1907. Read at British Medical Association. (Out of print.)
3. "The Relief of Eye Disease in Egypt with some consideration of the Incidence of Blindness and Trachoma." (Published in English and Arabic). Read at the XVI International Medical Congress, Buda-Pesth, September 1909.
4. "The Egyptian Ophthalmic Hospitals." (Published in English). Read at Annual Meeting of the British Medical Association, 1910.
5. "Ophthalmic Hospitals in Egypt." (Published in English). *Ophthalmic Record*, U.S.A., 1910.
6. "Communication read at the Fourth International Blind Congress in Cairo." February 1911. (Published in English, French, and Arabic). *Ophthalmoscope*, 1911, and Egyptian newspapers. (Out of print in French and Arabic.)
7. "Les Divisions du Trachome, le Traitement de cette affection et de ses complications." (French only). *Extrait des Archives d'Ophthalmologie*, September 1911. (Out of print.)

(iii) MEDICO-LEGAL REPORTS.

During the year 1911 the medico-legal “constatations” and the drawing up of the usual reports required by the law continued to occupy the time and energies of the district medical officers to a degree totally disproportionate to the value which can justly be attached to these documents.

Reference has been made on many previous occasions to this question, and in the Report for 1909 it was remarked: “Recent efforts have been made, by the introduction of short notes in a carbon-copy book for use in slight cases, to minimise waste of time and effort. Some reduction in this direction has taken place; but a further step to the desired end of accepting simple reports in *all* accidental cases is necessary before the position can be regarded as satisfactory.”

As the result of gradual pressure in the Mudirias it has been now found possible to reduce to some extent the amazing waste of time which previously occurred in the compiling of complicated reports in triplicate on most trivial injuries; the carbon-copy notes are accepted in all except the most serious criminal cases, and in all non-fatal cases of accident. With the abolition by the Ministry of Interior of Register No. 8 for Reports on Accidents the way has now been cleared for eliminating all clear cases of accident (even if fatal) from the category requiring the detailed and formal report in triplicate. It is therefore hoped that in the current year a still further reduction in the number of formal reports will be effected.

The following are the aggregate statistics for the last three years :—

TABLE XVIII.

		1909.	1910.	1911.
Slight cases ... ..	Accidental ... ..	5,409	4,314	4,317
	Criminal ... ..	26,233	26,405	23,113
Severe and fatal cases...	Accidental ... ..	5,996	5,876	6,193
	Criminal ... ..	3,483	3,031	2,953

Details by category, mudiria, and markaz will be found in the following table.



TABLE XIX.

MEDICO-LEGAL EXAMINATIONS.

								SLIGHT.		SERIOUS.		FATAL.	
								Accidental.	Criminal.	Accidental.	Criminal.	Accidental.	Criminal.
Cairo Governorate ... ..	118	275	91	10	33	5							
Alexandria „ ... ..	467	3,704	93	221	178	22							
Damietta „ ... ..	224	10	26	4	24	2							
Port Said „ ... ..	45	98	10	—	—	—							
Suez „ ... ..	21	155	4	4	4	1							
Ismailia „ ... ..	17	134	2	4	18	—							
El Arish „ ... ..	5	—	—	—	1	—							
Total ... ..	897	4,376	226	243	258	30							
Qaliubia Province :—													
Tukh District ... ..	71	341	44	27	53	6							
Qaliub „ ... ..	27	111	24	22	42	11							
Nawa } „ ... ..	46	329	21	11	34	7							
Barrage } Division, Medical ... ..	16	54	9	12	6	1							
Total ... ..	160	835	98	72	135	25							
Sharqia Province :—													
Zagazig District ... ..	113	209	—	2	67	4							
Hehia „ ... ..	31	103	26	19	43	4							
Kafr Saqr „ ... ..	23	162	12	7	32	9							
Belbeis „ ... ..	72	210	5	3	53	3							
Faqus „ ... ..	25	122	11	3	49	6							
Minia el Qamh „ ... ..	53	247	44	30	59	19							
Total ... ..	317	1,053	98	64	303	45							
Gharbia Province :—													
Tanta District ... ..	134	824	83	29	74	26							
Santa „ ... ..	60	185	22	14	43	7							
Zifta „ ... ..	70	198	13	6	44	10							
Mehalla el Kobra } „ ... ..	28	214	30	22	32	10							
Samanud } Division, Medical ... ..	12	64	21	4	29	2							
Talkha District ... ..	31	115	21	3	21	2							
Shirbin } „ ... ..	21	122	6	2	12	1							
Belqas } Division, Medical ... ..	15	38	23	3	33	5							
Borollos „ ... ..	3	23	1	1	5	1							
Kafr el Sheikh District ... ..	73	214	22	6	46	7							
Fua „ ... ..	13	71	12	10	15	—							
Desuq „ ... ..	25	112	23	14	53	6							
Kafr el Zayat } „ ... ..	33	174	70	20	28	8							
Basiun } Division, Medical ... ..	66	79	8	6	29	1							
Total ... ..	584	2,433	355	140	464	86							

TABLE XIX (continued).

								SLIGHT.		SERIOUS.		FATAL.	
								Accidental.	Criminal.	Accidental.	Criminal.	Accidental.	Criminal.
<i>Daqahlia Province :—</i>													
Mansura District	...	...	...	...	...	...	42	195	41	16	46	6	
Mit Ghamr	„	...	...	...	...	...	101	372	43	23	59	17	
Faraskur Division, Medical	...	...	...	...	...	...	26	100	16	10	41	3	
Aga District	...	...	...	...	...	...	28	91	36	6	41	3	
Simbellawein	„	...	...	...	...	...	21	176	38	16	39	3	
Dekernes	} Division, Medical	...	...	...	...	...	49	128	2	—	34	—	
Mataria		...	...	...	...	...	25	88	7	3	22	1	
Total ...								292	1,150	183	74	282	33
<i>Menufia Province :—</i>													
Shibin el Kom District	...	...	...	...	...	...	107	519	51	70	56	27	
Menuf	„	...	...	...	...	...	106	387	28	41	80	6	
Quesna	„	...	...	...	...	...	97	334	18	16	60	7	
Tala	„	...	...	...	...	...	72	256	47	30	37	19	
Ashmun	} Division, Medical	...	...	...	...	...	30	167	42	38	37	19	
Delta Barrage		...	...	...	...	...	7	32	2	5	9	2	
Total ...								419	1,695	188	200	279	80
<i>Behera Province :—</i>													
Damanhur District	...	...	...	...	...	...	47	356	21	30	10	—	
Shubrakhit	„	...	...	...	...	...	23	93	16	—	32	1	
Itai el Barud	„	...	...	...	...	...	47	167	17	19	27	13	
Rosetta	} Division, Medical	...	...	...	...	...	6	93	15	3	16	—	
El Atf		...	...	...	...	...	6	60	8	5	25	5	
Kom Hamada District	...	...	...	...	...	...	42	270	38	28	52	14	
Abu Hommos	„	...	...	...	...	...	37	148	11	22	31	14	
Delingat	„	...	...	...	...	...	8	139	11	29	21	5	
Kafr el Dauwar	„	...	...	...	...	...	26	112	14	14	36	5	
Mariut	} Division, Medical	...	...	...	...	...	—	32	8	3	—	1	
Siwa		...	...	...	...	...	11	11	1	1	2	1	
Raml		„	...	...	...	...	9	24	—	1	9	—	
Total ...								262	1,505	160	155	261	59
<i>Fayum Province :—</i>													
Fayum District	...	...	...	...	...	...	13	262	35	24	67	15	
Sennures	„	...	...	...	...	...	17	225	44	56	43	21	
Etsa	„	...	...	...	...	...	57	194	30	36	58	20	
Total ...								87	681	109	116	168	56
<i>Giza Province :—</i>													
Giza District	...	...	...	...	...	...	43	410	26	32	50	—	
Embaba	} Division, Medical	...	...	...	...	...	38	380	10	16	39	4	
Delta Barrage		...	...	...	...	...	10	141	5	18	38	5	
El Ayat District	...	...	...	...	...	...	35	158	52	31	38	10	
El Saff	„	...	...	...	...	...	6	358	21	27	33	7	
Total ...								132	1,447	114	124	198	26
<i>Beni Suef Province :—</i>													
Beni Suef District	...	...	...	...	...	...	38	542	61	27	38	21	
Wasta	„	...	...	...	...	...	26	255	57	46	57	22	
Biba	„	...	...	...	...	...	35	325	15	19	33	6	
Total ...								99	1,122	133	92	128	49



TABLE XIX (continued).

								SLIGHT.		SERIOUS.		FATAL.	
								Accidental.	Criminal.	Accidental.	Criminal.	Accidental.	Criminal.
<i>Minia Province :—</i>													
Minia	District	...	...	...	...	...	...	41	307	57	22	43	18
Beni Mazar	"	...	...	...	...	...	...	62	210	43	16	50	15
Fashn	"	...	...	...	...	...	...	24	207	55	22	7	6
Samalut	"	...	...	...	...	...	...	16	247	63	54	57	17
Abu Qurqas	"	...	...	...	...	...	...	79	195	13	42	27	9
Maghagha	"	...	...	...	...	...	...	53	212	19	14	26	16
Baharia Oasis	"	...	...	...	...	...	...	3	10	1	1	6	—
Total ...								278	1,388	251	171	216	81
<i>Assiut Province :—</i>													
Assiut	District	...	...	...	...	...	...	120	512	56	88	45	40
Manfalut	"	...	...	...	...	...	...	35	235	27	22	18	17
Deirut	"	...	...	...	...	...	...	43	390	93	69	50	13
Mallawi	"	...	...	...	...	...	...	29	448	85	51	85	21
Abnub	"	...	...	...	...	...	...	30	218	25	42	37	10
Badari	"	...	...	...	...	...	...	18	225	14	29	19	16
Abu Tig	"	...	...	...	...	...	...	45	288	79	52	51	33
Dakhla Oasis	"	...	...	...	...	...	...	2	11	1	1	5	2
Kharga Oasis	"	...	...	...	...	...	...	—	1	—	1	2	—
Total ...								322	2,328	380	355	312	152
<i>Girga Province :—</i>													
Sohag	District	...	...	...	...	...	...	66	515	15	25	56	13
Tahta	"	...	...	...	...	...	...	72	390	58	42	84	30
Girga	"	...	...	...	...	...	...	48	403	32	21	89	8
Baliana	"	...	...	...	...	...	...	32	231	56	18	44	6
Akhmin	"	...	...	...	...	...	...	33	324	6	22	30	9
Total ...								251	1,863	167	128	303	66
<i>Qena Province :—</i>													
Qena	District	...	...	...	...	...	...	40	178	14	24	40	23
Deshna	"	...	...	...	...	...	...	9	88	9	21	26	10
Esna	"	...	...	...	...	...	...	23	153	2	27	37	5
Nag Hamadi	"	...	...	...	...	...	...	47	165	67	18	65	13
Qus	"	...	...	...	...	...	...	11	122	14	17	28	5
Luxor	"	...	...	...	...	...	...	15	168	4	12	21	5
Qoseir Division, Medical	...	...	...	...	...	...	...	1	—	—	—	—	—
Total ...								146	874	110	119	217	61
<i>Aswan Province :—</i>													
Aswan	District	...	...	...	...	...	...	51	189	7	7	24	6
Edfu	"	...	...	...	...	...	...	8	133	5	9	46	5
Derr	"	...	...	...	...	...	...	12	41	3	15	12	9
Total ...								71	363	15	31	82	20
GRAND TOTAL...								4,317	23,113	2,587	2,084	3,606	869

(iv) MEDICAL COMMISSION.

The work of the Cairo Medical Commission continues to increase in a marked manner, more particularly in the year under report. The total number of cases dealt with in 1909 was 2,489, in 1910 it was 2,521, while in 1911 the number amounted to 3,088 (*see* details of the work in Table XX).

There is no doubt that the work of this Commission is of very great value to the Government in safeguarding the Treasury against unjustified claims, and in preventing bad bargains in the engagement, etc., of personnel. Many years back the Commission was instituted as a body composed of members of the Department, repeatedly changed and often not specially qualified by study or experience for the nature of the work involved. With the growth of demands made on the Commission and the increasing importance of its duties, it was felt more desirable to give the body a more fixed constitution. The president and members were appointed on a more permanent footing and steps were taken to obtain regularly outside expert opinion in special cases. This change certainly effected a considerable amelioration in the work, as well as greater regularity and conformity in the decisions given. It is felt, however, that the time is fast approaching when it will be necessary to create an independent board on a somewhat different basis, and which will relieve the members of this Department who cannot readily spare from their ordinary duties the time required by the work of the Commission.



TABLE

STATISTICAL RETURN OF THE

DEPARTMENT.	EMPLOYEES.							
	FIT.				UNFIT.		Post- poned for some time and re-exam- ined.	Standing Cases of Vision up to Dec. 1911.
	At Examination by Commission.	Vide Certificate Approved.	“ Maladie Légère. ”		Vision.	Other Diseases.		
			Vision.	Other Diseases.				
Ministry of Interior ... ..	287	...	5	...	95	36	4	14
Department of Public Health... ..	78	...	1	...	9	4	8	8
Prisons Department ... ..	9	...	...	...	5	...	...	2
Slave Trade Department ... ..	...	...	...	...	...	...	...	...
Council of Ministers ... ..	...	...	...	...	...	...	...	...
Ministry of Finance ... ..	80	...	1	...	16	7	7	9
Survey Department ... ..	8	...	...	...	...	...	...	1
Coast Guard Administration ... ..	6	...	...	...	...	1	...	...
Public Debt Department ... ..	4	...	...	...	...	...	...	...
Statistical Department ... ..	6	...	...	...	...	...	...	...
Customs Administration ... ..	...	...	...	...	1	...	...	...
Printing Department... ..	3	...	...	...	2	...	...	1
Postal Administration ... ..	59	...	...	...	4	1	3	18
Ministry of Public Works ... ..	76	...	1	...	10	5	5	4
Agricultural Department... ..	10	...	...	...	1	...	2	6
Egyptian State Railways... ..	129	...	2	...	17	1	3	17
Egyptian State Telegraphs ... ..	31	...	2	...	12	...	1	12
Ministry of Justice ... ..	151	...	...	...	22	8	3	20
Courts ... ..	49	...	...	...	5	2	...	4
Mixed Tribunals... ..	11	...	...	...	1	2	...	5
Parquet General ... ..	13	...	...	...	3	...	...	3
Ministry of Education ... ..	138	4	2	...	18	8	12	13
War Office ... ..	36	...	...	...	1	...	4	2
Ministry of Foreign Affairs ... ..	1	...	...	...	...	...	...	...
Wakfs Administration ... ..	36	...	2	...	1	...	...	6
Gharbia Mudiria ... ..	...	...	...	...	...	...	...	...
Daqahlia „ ... ..	...	...	...	...	...	...	...	...
Qaliubia „ ... ..	...	...	...	...	...	...	...	...
Giza „ ... ..	...	...	...	...	...	...	...	...
Fayum „ ... ..	...	...	...	...	...	...	...	...
Minia „ ... ..	...	...	...	...	...	...	...	...
Assiut „ ... ..	...	...	...	...	...	...	...	...
Cairo Governorate ... ..	...	...	...	...	...	...	...	...
Alexandria Municipality ... ..	...	...	...	...	...	...	...	...
Legislative Council ... ..	...	...	...	...	...	...	...	...
Contentieux... ..	1	...	...	...	...	...	...	...
Khedivial Khassa ... ..	...	...	...	...	...	...	...	...
Sudan Government ... ..	...	...	...	...	...	...	...	...
GRAND TOTAL... ..	1,222	4	16	...	223	75	52	145

XX.

MEDICAL COMMISSION, 1911.

										Expert Opinion taken.	HEIRS.			Recommended for Pension for some time and re-examination.	TOTAL.
PENSIONS.					LEAVES.			Sent to Hospital for Treatment Observation and Report.	Age.		Able to obtain Livelihood.	Unable to obtain Livelihood.	Age.		
Unfit examined by Commission.	Unfit, vide Certificate Approved.	Grand Mal.	Petit Mal.	Found Fit for Duty.	Granted, vide Certificate Approved.	Granted after Examination by Commission.	Refused.								
87	78	2	...	25	36	81	10	5	1	5	...	...	...	...	771
15	2	1	...	4	27	30	9	...	...	1	...	...	...	...	197
1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	18
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
20	2	3	...	13	40	62	8	...	16	...	...	3	...	2	289
11	...	...	...	2	15	4	1	...	...	1	...	...	...	...	43
6	...	...	...	...	3	5	1	1	...	1	...	...	...	...	24
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	5
...	...	...	...	...	1	2	...	...	1	...	...	...	...	...	10
...	...	...	...	...	1	3	...	...	...	...	...	...	...	...	5
1	...	...	...	...	...	1	1	...	2	...	...	...	...	...	11
9	1	1	...	4	1	24	7	...	...	...	...	...	...	...	132
29	3	1	...	3	32	44	6	...	13	2	...	...	...	...	234
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	19
9	1	2	...	3	...	2	...	..	3	2	...	...	...	...	191
2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60
16	3	3	...	1	25	27	4	...	5	...	...	...	...	...	288
1	1	...	...	...	6	12	1	...	81	...	...	...	...	...	162
2	...	...	...	1	1	6	...	...	71	...	...	...	...	...	100
4	...	...	...	...	3	9	1	...	50	...	...	...	...	...	86
4	1	...	...	1	31	31	2	...	5	...	...	...	...	...	270
7	...	...	...	...	3	...	1	...	...	...	...	...	...	...	54
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
5	1	...	...	2	...	...	...	...	4	...	...	...	...	...	57
...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1
...	1	...	...	...	5	5	1	...	...	...	1	...	...	...	13
...	...	...	...	...	5	...	...	...	...	...	...	...	...	...	5
...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	2
...	...	...	...	...	2	...	1	...	...	...	...	...	...	...	3
...	...	...	...	...	...	1	...	...	...	1	5	7	7	1	22
...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1
233	94	13	...	59	245	356	54	6	252	13	6	10	7	3	3,088



(v) GENERAL STORES.

This important branch of the Department is about to receive its promised re-organization and the provision of a staff adequate in numbers, training and experience for carrying out its increasing duties. The fact that so much work has been got through—work of various and pressing character and involving repeated dealing with emergencies—reflects considerable credit on the existing senior staff and on certain members of the junior staff, but there is no doubt that undue strain is seriously and increasingly felt by the more competent individuals as the result of their paucity in numbers and the inadequacy in aptitude and experience of their less competent colleagues.

In the matter of buildings, an additional section of the equipment store, as well as the new plague store were completed and were ready for occupation early in the present year (1912). Further stores accommodation is, however, required, of which the most pressing needs are:

- (1) Sample room ;
- (2) Accommodation for the clerks of the central office ;
- (3) Thorough repair of stables and workshops ;
- (4) Sheds for carts ;
- (5) Additional accommodation for “cholera ” or emergency equipment.

At present it is necessary, in the interest of keeping accurate stores accounts, to maintain the cholera store separate from the plague store and from the general equipment store, for the reason that the materials are provided out of credits which are separate items in the Budget.

Under this system there is considerable overlapping and unnecessary reduplication of work: it would be preferable to institute a combined epidemic store for general service, maintaining, if desired for financial reasons, an “emergency” store for special credits and special occasions.

The new stores regulations were published at the end of 1911 and came into force in January 1912. These regulations will be gradually carried out as improving efficiency permits amongst the central and local staff, which at present is somewhat short in training and experience.

During the course of the year a new alphabetical inventory in accordance with the revised nomenclature was brought into operation, and the inventories of all units have been brought up to date for the 1st January 1912. Many difficulties arise in the keeping of inventories in the units owing to the absence of trained store-keepers; in most hospitals the bash-tamurgies, clerks, or dispensers are in charge of stores and many errors have taken place in the naming and description of articles; errors, however, which can be rectified by time and experience in working the new regulations.

A new edition of the priced vocabularies of the various stores sections is now in the press. This will render considerable assistance in carrying out the routine work.

Departmental stores regulations, based on the General Stores Regulations, and specially adapted to the requirements of the Department of Public Health, have been drafted and are now in the press; they will doubtless require revision and extension as the re-organization of the Stores Service proceeds.

During the year 1911 a total of 29 adjudications was made, involving a sum of L.E. 81,101, of which the more important were:—

	L.E.
Drugs, dressings and dispensary appliances ... ..	8,390
Equipment, clothing, etc. ... ..	14,772
Soft soap and crude carbolic acid ... ..	2,764
Meat for Cairo hospitals ... ..	6,195
Bread for Cairo hospitals (Lunatic Asylum excluded which bakes its own bread)	1,690
Flour for Abbassia Lunatic Asylum ... ..	3,120
Coals and coke ... ..	3,500
Tibn for Scavenging and Watering Service ... ..	1,930
Cyprus cattle ... ..	1,580
Soap for washing, candles, etc. ... ..	1,430
Corrosive sublimate ... ..	3,570
Equipment, etc., for Scavenging and Watering Service ... ..	2,766
Hospital rations... ..	25,280

In addition to these adjudications no less than 1,860 foreign and local orders have been sent out.

*Transport Section.*—16 mules and one horse were attached to the Central Stores for the transport of goods and patients. The ambulances were used on 1,927 occasions.

*Rinderpest Serum.*—89,419 doses of 50 c.c. were issued during the year.

*Instrument Shop.*—About 12,000 instruments, etc., were repaired during the year.

*Epidemic Stores.*—From Central Stores 1,192 issues of various kinds were made to plague camps, in addition to three ambulances for 30 beds, and 21 canteens for doctors and disinfectors. The remainder of stores for plague were issued by the provincial plague stores.





PART II.—PUBLIC HEALTH.

A.—GENERAL CONSIDERATIONS.

(i) CENSUS.

The following table gives the calculated population (based on the Census of 1907) to the 1st July 1910, and 1st July 1911, of the twenty principal towns of Egypt. The figures are those on which the published statistics of births and deaths are compiled.

TABLE XXI.

EGYPTIAN AND FOREIGN POPULATION OF THE TWENTY PRINCIPAL TOWNS OF EGYPT.

TOWN.	1910.			1911.		
	Egyptians.	Foreigners.	Total.	Egyptians.	Foreigners.	Total.
Cairo ... ..	620,648	62,565	683,213	629,583	64,643	694,226
Alexandria ... ..	319,113	68,874	387,987	323,965	70,613	394,578
Damietta ... ..	31,989	257	32,246	32,806	259	33,065
Tanta ... ..	54,119	1,481	55,600	54,519	1,488	56,007
Mansura ... ..	40,285	1,638	41,923	40,977	1,638	42,615
Damanhur ... ..	40,677	372	41,049	41,557	372	41,929
Zagazig ... ..	34,764	1,655	36,419	35,215	1,661	36,876
Shebin el Kom ... ..	22,780	182	22,962	23,351	182	23,533
Giza ... ..	17,014	102	17,116	17,254	104	17,358
Benha ... ..	16,614	206	16,820	17,129	209	17,338
Port Said ... ..	43,390	10,738	54,128	44,628	10,738	55,366
Suez ... ..	16,429	2,551	18,980	16,802	2,551	19,353
Ismailia ... ..	9,314	2,214	11,528	9,786	2,232	12,018
Fayum ... ..	38,343	174	38,517	38,598	175	38,773
Beni Suef ... ..	25,507	339	25,846	26,302	354	26,656
Minia ... ..	27,822	390	28,212	28,189	398	28,587
Assiut ... ..	40,367	261	40,628	40,979	265	41,244
Sohag ... ..	18,336	67	18,403	18,662	67	18,729
Qena ... ..	20,494	72	20,566	20,696	72	20,768
Aswan ... ..	12,386	507	12,893	12,293	539	12,832
TOTAL ... ..	1,450,391	154,645	1,605,036	1,473,291	158,560	1,631,851

The total population of the country according to the census was, in 1907, 11,189,978. It is calculated in July 1911 to be 11,337,852 (11,169,602 Egyptians and 168,250 foreigners).

## (ii) REGISTRATION OF BIRTHS AND DEATHS.

Reference was made in last year's Report to certain amendments of the law which it was expected would be shortly promulgated. At the time of writing (June 1912) the amended law has received the assent of the Mixed Court of Appeal, but it has not yet been promulgated. The material amendments introduced into the original law provide mainly for :—

- (1) The declaration of still-births within a period of 24 hours ; and
- (2) The application of the compulsory notification clause to foreigners on the same terms as Egyptians.

It is true that these provisions (more particularly the latter) effect some improvement from a legislative point of view, and it is probable that they may be more or less effectively carried out in the cities and large towns where Medical Officers of the Government reside and are able to exercise immediate supervision ; but in the small towns, the villages, and the "ezbas" of the country districts, the requirements for efficient registration are not so much of a legislative as of an administrative order. The person who is ultimately responsible for the duty of registration is at present the "sarraf" (tax-gatherer) who, being an employee of the Ministry of Finance, is not only not under the orders of this Department, but is also provided with a variety and extent of other duties which at times form a very valid excuse for the non-performance of those of village registrar, excuses of which he does not hesitate to avail himself.

It is hoped, however, that as the village barber class becomes improved into one that as a matter of course is able to read and write they will be able to take over the duties of registrar with direct responsibility to this Department.

## (iii) VILLAGE ORGANIZATION :

### BARBERS AND SANITARY AGENTS (OR HOSPITAL ASSISTANTS).

Reference has been made in previous Reports to a scheme already partly instituted for improving the standard and utility of the village barber, first of all in connection with special plague measures in Upper Egypt, and secondly in connection with the prospective work of the Provincial Councils. These bodies have been invited to interest themselves in some of the problems of village sanitation, including the improvement of the village barber, the erection of village dispensaries and shelters, besides other matters. It is satisfactory to be able to report that the Councils have taken up with considerable interest some of the projects in the programme outlined for their consideration, but none perhaps so readily as that of the "village barber," which they now usually recognise to be a matter of first class importance. With very few exceptions every Provincial Council has recently provided money to enable the village barber to attend a very practical course of instruction at the provincial hospital, providing him with pay during his absence from his village and his business, and at the moment of writing (June 1912) the plan is actually proceeding in six of the provinces. The intention is that selection shall be made from the young men of better class in the villages, of suitable age and primary education (reading and writing), existing barbers being the first choice where possible. The course of instruction will include training in personal cleanliness and duties of a hospital assistant, the teaching of "first aid," recognition of certain infectious or suspect diseases, measures of isolation and disinfection, and simple measures for the prevention of the too common ophthalmia and its temporary relief till the Medical Officer is seen. The object is to produce, not an inferior class of medical practitioner, but a superior type of the village barber ; a person who will not endeavour to treat cases of illness or accident himself but will insure, as far as possible, that such cases are seen by the Medical Officer concerned, and take such measures as are advisable and possible until this Officer comes on the scene.



The new barbers should afford, therefore, not only a desirable help to the people, but also an improved source of information to the authorities, thereby very effectively strengthening their hands in matters of sanitary defence and suppression of infectious disease, where information—the earliest information—is of special value.

The scheme at the moment is in a tentative stage, and can only be regarded as an experiment in which experience may indicate necessary modifications as time goes on. It is not an ambitious one; and indeed owes much of the ready support it has recently received in the country to the essentially modest nature of its aims.

It is further proposed that when the barbers have gone through their course of training, they shall each be furnished with a small dispensary such as will give them means of carrying out the duties they are to perform, and the contents of which will be carefully arranged in order to make their application as simple and as devoid of danger as possible.

The curriculum, as suggested for the present, but which is still in an experimental stage, covers considerable ground, though it is specially drafted on practical and simple lines adapted for assimilation by the class of man for whom it is designed.

The Department does not disguise from itself that there may be considerable difficulties in attendance on the progress of the scheme, not the least of which will be the temptation (already a strong one) for the barber at first improved into a “hospital assistant” to later degenerate into an “unlicensed practitioner,” in which rôle he may do more harm than good. At the same time it is believed that by giving the right tone to the course of instruction and by insisting on its special character the road may be paved for arriving at the desired end, while careful supervision by the Inspectors and the Markaz Medical Officers in the future should afford the necessary restraint.

#### (iv) KUTTABS.

It is probable that no circumstances contributed more to the propagation of ophthalmic and other infectious maladies than did the attendance of village children at the local “kuttab” (elementary school) of the old type, which were undoubted hot-beds of disease. It cannot be pretended that these insanitary schools have entirely ceased to exist, but considerable progress has been made under the aegis of the Ministry of Education and the recently re-organized Provincial Councils. There are now 144 of these kuttabs actually administered by the Government, while more than 3,500 are under inspection and receive grants in aid under conditions securing satisfactory management.

It is further hoped that the course of training which the village barber is now receiving and which includes instruction in preliminary precautions against eye-disease may assist in reducing, if not altogether removing, the unenviable notoriety which the village school has earned in the propagation of disease.

#### (v) INFANT MORTALITY AND PROTECTION OF INFANT LIFE.

The wave of exaggerated infant mortality which attracted so much attention in 1909 was succeeded in 1910 by a rate which must be regarded as a somewhat favourable one when compared with the previous years.

In the year 1911, there was a general rise of infant mortality throughout the country as compared with the previous year, although so far as statistics are available it does not appear to have been markedly above the average of the previous ten years.

The attached tables, Nos. XXII and XXIII, give vital statistics for the past year in the twenty principal towns of Egypt. The important figures are to be found in the third column from the right, which gives the ratio of deaths under one year of age to the births of the same place. It will be seen that the average throughout is some thirty per cent., which, as compared with civilized countries of temperate climate, is, of course, a very high one. The corresponding figure for 1910 is 28·2 per cent., and for 1909, 33·1 per cent.



TABLE XXII.

BIRTHS AND DEATHS AND INFANT MORTALITY IN THE PRINCIPAL TOWNS FOR 1911.  
*Egyptians.*

TOWN.	TOTAL.				INFANT DEATHS.		PROPORTION % OF INFANT MORTALITY.		
	Births.		Deaths.		Under 1 Year.	From 1 to 10 Years.	Deaths under 1 Year.		From 1 to 10 Years.
	Number.	‰	Number.	‰			To Births.	To Deaths.	To Deaths.
Cairo ... ..	32,203	51·1	27,193	43·2	10,274	7,861	31·9	37·8	28·9
Alexandria... ..	15,213	47·0	11,515	35·5	4,086	2,918	26·9	35·5	25·3
Damietta ... ..	1,622	49·4	816	24·9	293	172	18·1	35·9	21·1
Port Said ... ..	2,423	54·3	1,390	31·1	510	375	21·0	36·7	27·0
Suez ... ..	943	56·1	604	35·6	254	129	26·9	42·1	21·4
Ismailia ... ..	851	87·0	414	42·3	136	134	16·0	32·8	32·4
Benha ... ..	611	35·7	500	29·2	181	153	29·6	36·2	30·6
Zagazig ... ..	1,742	49·5	1,407	40·0	486	456	27·9	34·5	32·4
Tanta ... ..	2,985	54·8	2,652	48·6	883	803	29·6	33·3	30·3
Mansura ... ..	1,983	48·4	1,403	34·2	414	427	21·4	29·5	30·4
Shebin el Kom ... ..	1,165	49·9	640	27·4	188	132	16·1	29·4	20·6
Damanhur ... ..	2,033	48·9	1,503	36·2	560	455	27·5	37·3	30·3
Giza ... ..	1,005	58·2	843	48·9	358	268	35·6	42·5	31·8
Fayum ... ..	2,369	61·4	2,245	58·2	950	796	40·1	42·3	35·5
Beni Suef ... ..	1,470	55·9	1,078	41·0	545	249	37·1	50·6	23·1
Minia ... ..	1,697	60·2	1,397	49·6	648	353	38·2	46·4	25·3
Assiut ... ..	2,397	58·5	1,999	48·8	805	589	33·6	40·3	29·5
Sohag ... ..	993	53·2	816	43·7	288	287	29·0	35·3	35·2
Qena ... ..	1,133	54·7	1,185	57·3	420	381	37·1	35·4	32·2
Aswan... ..	577	46·9	695	56·5	237	191	41·1	34·1	27·5
TOTAL... ..	75,415	51·2	60,295	40·9	22,516	17,129	29·9	37·3	28·4

TABLE XXIII.

BIRTHS AND DEATHS AND INFANT MORTALITY IN THE PRINCIPAL TOWNS FOR 1911.  
*Foreigners.*

TOWN.	TOTAL.				INFANT DEATHS.		PROPORTION % OF INFANT MORTALITY.		
	Births.		Deaths.		Under 1 Year.	From 1 to 10 Years.	Deaths under 1 Year.		From 1 to 10 Years.
	Number.		Number.	‰				To Deaths.	To Deaths.
Cairo ... ..	319	...	821	12·7	146	130	...	17·8	15·8
Alexandria... ..	729	...	961	13·6	173	146	...	18·0	15·2
Damietta ... ..	9	...	2	7·7	1	...	...	50·0	...
Port Said ... ..	120	...	151	14·1	33	13	...	21·9	8·6
Suez ... ..	28	...	56	22·0	6	3	...	10·7	5·4
Ismailia ... ..	92	...	42	18·8	8	7	...	19·0	16·7
Benha ... ..	7	...	4	19·1	...	1	...	...	25·0
Zagazig ... ..	17	...	17	10·2	7	...	...	41·2	...
Tanta ... ..	32	...	13	8·7	4	6	...	30·8	46·2
Mansura ... ..	22	...	23	14·0	3	7	...	13·0	30·4
Shebin el Kom ... ..	4	...	5	27·5	...	...	...	...	...
Damanhur ... ..	2	...	3	8·1	1	...	...	33·3	...
Giza ... ..	1	...	5	48·1	...	2	...	...	40·0
Fayum ... ..	4	...	6	34·3	...	2	...	...	33·3
Beni Suef ... ..	1	...	3	8·5	...	2	...	...	66·7
Minia ... ..	8	...	3	7·5	1	1	...	33·3	33·3
Assiut ... ..	6	...	4	15·1	2	...	...	50·0	...
Sohag ... ..	3	...	1	14·9	1	...	...	100·0	...
Qena ... ..	1	...	2	27·8	2	...	...	100·0	...
Aswan... ..	2	...	5	9·3	1	...	...	20·0	...
TOTAL... ..	1,437	...	2,127	13·4	389	320	...	18·3	15·0

On examining the figures in detail it will be seen that the mortality ranges from 16·0 per cent. at Ismailia, 16·1 per cent. at Shebin el Kom, and 18·1 per cent. at Damietta, to 26·9 per cent. at Alexandria, 31·9 per cent. in Cairo, to the region of the forties in Fayum and Aswan ; also on comparing the annual rates in each town during the last four years it becomes evident that the rate varies very considerably from year to year (*see* attached table, No. XXIV).

TABLE XXIV.

COMPARATIVE TABLE OF THE RATES OF INFANT MORTALITY, 1908-1911.

TOWN.	1908.	1909.	1910.	1911.
Cairo ... ..	28·2	37·6	29·2	31·9
Alexandria ... ..	25·9	29·8	27·8	26·9
Damietta ... ..	15·3	15·8	16·5	18·1
Port Said ... ..	16·2	22·9	23·6	21·0
Suez ... ..	24·7	25·7	28·4	26·9
Ismailia ... ..	15·7	22·7	17·9	16·0
Benha ... ..	27·8	28·3	28·8	29·6
Zagazig ... ..	26·4	28·2	25·6	27·9
Tanta ... ..	24·3	30·3	29·2	29·6
Mansura ... ..	20·7	28·3	24·1	21·4
Shebin el Kom ... ..	21·7	22·3	15·5	16·1
Damanhur ... ..	25·4	30·2	26·8	27·5
Giza ... ..	30·2	44·9	30·5	35·6
Fayum ... ..	35·7	33·7	32·3	40·1
Beni Suef ... ..	30·4	32·7	35·4	37·1
Minia ... ..	30·7	40·6	34·5	38·2
Assint ... ..	27·1	33·0	29·7	33·6
Sohag ... ..	26·1	29·0	28·6	29·0
Qena ... ..	26·5	28·3	28·2	37·1
Aswan ... ..	37·1	33·7	28·7	41·1

Similar variations may be observed in the towns and cities of Europe, and are illustrated by the statistics recently published by the “Office International d’Hygiène Publique” (Monthly Bulletin, April 1912). The variations therein recorded appear to be of three categories, *viz.* :—

(a) A general variation between different countries apparently depending on climate and the general state of sanitation and education.

(b) A variation between the average mortality of different towns in the same country depending again on climatic factors, concentration of population, and other economic and sanitary conditions.

(c) A variation from year to year in the same centre of population depending partly on progress in sanitary methods and partly on a periodic epidemiological factor which is undoubtedly present in relation to high temperature.

These are general conclusions which can be derived from the figures as they stand for whole annual periods ; if, however, such figures were available in monthly or weekly periods, it is probable that other interesting conclusions would present themselves.

In the Report for 1909, attention was drawn to the fact that “a high rate of infant mortality is by no means peculiar to Egypt ; it is to be observed during the hot weather in all countries where the mean temperature of the hottest months of the year is above 16° C. (approximately 61° F.). It is chiefly the result of digestive troubles, under the form of acute or sub-acute enteritis, or gastro-enteritis, ordinarily known under the name of “summer diarrhœa.” After referring to various alleged causes of the malady it was stated that investigations were being undertaken with regard to the circumstances attending the hot weather increase in infant mortality. Attention was also drawn to the importance of “education of the mothers in habits of care and cleanliness ; and study is now being



made of the best methods by which rational care of children can be inculcated in the mothers of the poorer classes. In this direction the Lady Cromer's dispensaries have given a most useful lead. If the influence amongst the poorer classes which these institutions have achieved could be developed on larger lines, if the well-to-do Egyptian could be interested in the work and brought into an organization for the furtherance amongst their womenkind of the training of mothers in the care of their children, it is not unreasonable to believe that some good might result."

It is satisfactory to report that the dispensary system has taken on considerable extension and the Provincial Councils have already made a beginning and are in the way of seriously taking up the question during the present summer.

The following extract from a speech recently made by the Right Hon. John Burns, M.P., at a meeting in London, describes the progress already made in England—and although the circumstances of climate, education, the organization of charity, and the widespread assistance of doctors, nurses, and hospitals, are all to the advantage of Great Britain, there is no reason why improvement even on a more modest scale should not eventually attend the efforts at present here being made when the factors of success now existing in Great Britain become a realised quantity in this country.

Mr. Burns said:—

"When they began their work the infant mortality rate stood at the relatively high figure of 145 per 1,000. In six years the number had diminished to 105 per 1,000. In 1911 infant mortality increased, but that was owing to the warmest and driest summer which they had had for a hundred years. There were also many local, social, and industrial reasons that accounted for the increased mortality. There was now an extraordinary improvement in the treatment of children compared with the past. One hundred years ago, at the Foundling Hospital in London, 14,934 children were deposited in four years, of whom 10,389, or just over 70 per cent., died. At present the death-rate at that institution was less than that of the children of rich families in Mayfair, and less than half the rate for the whole of the country.

"The improved conditions had been brought about first by the doctor, secondly by the nurse and the midwife, and then by benevolent people, who had been slowly and disinterestedly achieving their object. Not only were they reducing the general average of mortality, but they were knocking off the high peaks of exceptional mortality in certain areas. They no longer had the death-rate of 250 or 500 per 1,000 in special areas which they had ten and twenty years ago. In no country had greater progress been made than in Great Britain and Ireland in the last four years. The decline was not due to any one special reason, but to many causes, experiments, and ideas converging on the questions of how to protect the mother, save the infant, guard the child, and reinvigorate the race. Since the Notification of Births Act was passed in 1907, 315 local authorities, representing more than half the country's population, had adopted that measure. Other causes which contributed to the present satisfactory position were the increasing number of appointments of health visitors by local authorities, better feeding, the establishment of schools for mothers, and the improved character and quantity of the literature issued by the various associations and by the local authorities. Three years hence they ought to have an average infant mortality rate of 100 per 1,000, and in 75 per cent. of the areas it should range between 80 and 90."

In considering measures of this kind it is important to distinguish those which merely relieve individual suffering for the time being (although such an object will undoubtedly produce considerable result in the aggregate) from those which tend to preserve and develop the virility and healthiness of the race. Thus, for instance, in the existing dispensaries, those who administer them and come in closest contact with the problem awaiting solution are practically unanimous in agreeing that the essential utility of the institutions is not so



much in the individual treatment that the children may receive, as in the teaching which is insisted on of certain habits of cleanliness and feeding on the part of the women with whom they come in contact.

The affection is, indeed, a “filth disease,” as was pointed out in the Departmental Report for 1909. On this point the following extracts from a monograph by Dr. Toogood\* are of interest :—

“Obviously, the disease is due to bacterial infection, although no constant specific organism appears to have been isolated ; various streptococci, staphylococci, and bacilli, have been noted, and amongst the latter *B. coli*, *B. proteus*, Shiga’s bacillus, and *B. cyanogenus* occur constantly.

“In dealing with prevention I may be permitted to remark that the surest mode of escape is to feed the baby exclusively upon the breast, and to postpone the weaning of all children until September† has passed. The introduction of Municipal milk depots, concerning which such extravagant hopes were entertained, has not, by any means, freed our cities from this filth disease, because, at the best, it only closes one gate through which infection may enter. What happens after the milk is taken home is beyond the ken of any Health Department, and while human nature is what it is the most admirably planned model dwelling may still have its bath used as a receptacle for coal, and its sink do duty for a pantry.”

Again, Dr. Richards (Medical Officer of Health of Croydon), in a very lucid and well argued paper published in Vol. III of the “Journal of Hygiene,” clearly points out the connection of the disease with sewage-polluted soil, a condition which it is too often the misfortune of the children of this country to be associated with.

The local problem, indeed, is at present one of education, by which care and habits of cleanliness may be inculcated, and more than ever the education of the women. There are two channels by which this education can and should proceed :—

First of all by the development of the infants’ dispensary system throughout the country, beginning naturally with the large towns.

The second channel is that of female education in the schools and “kuttabs.”

With effective management the first channel can hope to reach a comparatively large number of the adult female population in the course of a few years, though how far that influence will be maintained after the primary cause of the connection of the women with the dispensaries has ceased is a matter of some uncertainty.

The second channel will naturally take a considerable time before its influence can become effective or perceptible.

Until these channels of influence have been sufficiently developed, it must be realized that all other palliative measures which have been suggested and used in this country can do little more than deal with the fringe of the subject. The main object, and, indeed, this cannot be too much insisted on, is that the people, and especially the women, should be sufficiently educated and trained in domestic management to enable them to follow the simplest rules of domestic hygiene.‡ When this is in process of achievement some little progress may be expected, progress which it is hoped may increase from year to year as time goes on.

In illustration of what has gone before, it may be stated that, so far as experience goes, the children’s dispensaries initiated by Lady Cromer and those instituted by the Société

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\* Superintendent of Lewisham Infirmary ; Consulting Medical Officer to the National Society of Day Nurseries.

† This refers, of course, to the climate of England.

‡ Leaflets of short instructions to mothers, supplied by this Department, have for some years been distributed in the dispensaries ; these instructions are now also printed on the back of the birth certificate issued throughout the country, and further and more detailed instructions have recently been issued in popular language to the *mudirias* for distribution in all villages.



Protectrice de l'Enfance and L'Œuvre Mohamed Ali, as well as the admirable institution for this purpose established at Minia, have done a vast amount of good, for not only have they actually relieved the suffering of the time, but they have made the first step in inculcating habits of cleanliness and care to a certain extent amongst the women with whom they have come in contact. It is in this latter aspect of the work that the more hopeful view may be taken of its results, for although the present sphere of action is limited, it is certain that by a gradual extension of those institutions in the large towns and provinces of the country, the field will be gradually widened until the whole of the country may be ultimately penetrated by a far-reaching leavening process.

The total number of cases dealt with by the Lady Cromer's dispensaries in 1911 exceeded 17,000 in Cairo and 6,700 in Alexandria; in the dispensary of the Société Protectrice de l'Enfance some 28,000 visits were dealt with, and a similar number at the dispensary of L'Œuvre Mohamed Ali, while in the town of Minia no less than 5,087 new cases were seen. As all these children were dealt with under the eyes of at least their mothers, and possibly of some other women relations also, it follows that probably some 30,000 women at least received instructions in the cleanliness and care advocated. According to the reports of these Societies it is fair to believe that this instruction was not without result.

As regards the second channel of influence already referred to, namely, the education of girls, one of the most hopeful features in relation with modern progress in Egypt is the very marked and marvellous impetus which has been recently given to female education, more particularly in the lowest grade; thus, as Lord Kitchener has stated in his recent Report to the British Foreign Office, the total number of girls' schools of all kinds under the management or inspection of the Ministry of Education is 2,713, and the number of girls in attendance is 25,023. Of these, no less than 18,832 are attending village "kuttabs."

This fact itself indicates the progress which is being made towards developing female intelligence, which after all is at the root of many more problems in this country than that of infant mortality.

In connection with this subject it is necessary to add that attention was drawn last autumn to the "Quinton" dispensary in Soho (London) which was established with the support and patronage of Mr. Otto Beit, and the administration of the so-called Quinton "plasma" in cases of gastro-enteritis of infants was examined. Its composition and method of manufacture were not, however, published at the time, but owing to the enthusiastic advocacy of M. Quinton, its administration obtained a great vogue, and so far as evidence went the results in London were as favourable as they had been in Paris, and that in the exceptionally hot summer of 1911.

The Department ultimately decided, in accord with the Committee of the Lady Cromer's Dispensaries, to test the method of saline injections\* in cases of gastro-enteritis attending the dispensaries and arranged to procure their own supply of sea-water from a selected spot outside Alexandria. This process is now going on, is being gradually extended to the mudiria towns as fast as trained staff can be supplied, and it is hoped to have a complete report on the subject at the end of the year.

The method advocated by M. Quinton consists in the sub-cutaneous injection of an "isotonic" dilution of sterile sea-water, *i.e.*, a natural saline solution, and is an adaptation of the system of Dr. Leonard Rogers that has been so long known and practised (particularly in cholera) in India. There is no specific action to be attached to this natural saline, and the word "plasma" does not seem fitted to express either its nature or its properties.

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\* Namely: (1) The "normal saline" solution (physiological serum);  
(2) The Quinton water;  
(3) Isotonised sea-water made by the laboratories of this Department.



This view is supported by the Academy of Medicine, of Paris, which reports on the matter as follows :—

“It is known that the Quinton “plasma” is nothing else than sea-water gathered under conditions of asepsis in the offing at Arcachon, and rendered isotonic by the addition of sterilized water. The Quinton plasma has already long been applied in the treatment of infantile diarrhœa, in particular by MM. Hutinel and Meunier. It sometimes gives good results when, as a consequence of profuse diarrhœa, there is great dehydration of the organism. It must be recognized, however, that physiological serum gives analogous results in these cases of deprivation of water and demineralization of the tissues. The Quinton plasma cannot therefore be considered either as a specific or as a panacea in infantile diarrhœa. Its use should not therefore replace in any way the ordinary prophylactic measures nor the rational treatment of the disease.”

Meanwhile, M. Quinton has recently visited this country and taken a vast interest in the whole matter, so that by his enthusiasm and expressed conviction of the value of his special method he has gained many adherents to the cause of medical aid to suffering infants.

### B.—INFECTIOUS DISEASES.

The chief features to be remarked in connection with infectious disease during 1911 are :—

- (1) The considerable increase in the incidence of plague, especially in the Upper Egypt mudirias ;
- (2) The increase in both the cases and the mortality from measles ;
- (3) The continued reduction in the incidence and mortality from enteric fever ;
- (4) The very marked increase in the case-incidence and mortality from typhus (exanthematic).

It is without doubt in the villages that the great mortality from measles and typhus (exanthematic) fever occur, where limitation of infection is most difficult, and where careful attendance is most deficient—circumstances which afford additional emphasis to the necessity of improving village sanitation and training the village barber to the care of the sick and the mothers to greater care of their children.

In addition to Table VI, which shows the aggregate of infectious disease treated during 1911, the following table, No. XXV, gives interesting details regarding the incidence of infectious disease, not including plague. This is the first introduction of a similar table into these Reports. It is specially useful as giving a rapid and comprehensive impression of the incidence of the various diseases in the country, and is constantly referred to in the sections which follow :—

TABLE XXV.

#### INCIDENCE OF INFECTIOUS DISEASES.

GOVERNORATE.	SMALLPOX.		MEASLES.		DIPHTHERIA.		TYPHOID FEVER.		TYPHUS (exanthematic).		RELAPSING FEVER.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cairo ... ..	22	3	35	7	86	35	42	7	43	11	168	5
Alexandria ... ..	79	14	16	3	137	35	81	15	22	9	41	3
Damietta ... ..	113	15	2	...	18	1	2	...	8	1	...	...
Port Said ... ..	72	28	4	1	9	5	20	4	11	4	3	...
Suez ... ..	15	2	31	3	5	2	12	1	4	1	4	...
Ismailia ... ..	1	...	1	...	2	...	2	...	...	...	...	...
TOTAL ... ..	302	62	89	14	257	78	159	27	88	26	216	8

TABLE XXV (continued).

INCIDENCE OF INFECTIOUS DISEASES.

PROVINCE AND DISTRICT.	SMALLPOX.		MEASLES.		DIPHTHERIA.		TYPHOID FEVER.		TYPHUS (exanthematic).		RELAPSING FEVER.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
<i>Gharbia Province :—</i>												
Tanta district ... ..	47	11	1,609	948	11	4	9	2	271	67	61	5
Kafr el Sheikh district	67	3	13	...	...	...	...	...	120	16	...	...
Mahalla el Kubradistr.	46	6	...	...	9	5	...	...	20	5	...	...
Sherbin district ... ..	85	22	...	...	...	...	...	...	19	4	...	...
Kafr el Zayat district	71	9	58	14	...	...	...	...	752	102	...	...
Desuq district ... ..	25	3	13	7	...	...	...	...	27	7	...	...
Santa district ... ..	34	5	37	17	1	...	...	...	...	...	19	4
Talkha district ... ..	35	7	45	38	1	1	...	...	294	96	...	...
Fua district ... ..	7	1	11	...	...	...	...	...	...	...	...	...
Zifta district ... ..	8	...	66	39	2	1	...	...	10	3	...	...
Borollos district ... ..	5	1	8	3	...	...	...	...	...	...	...	...
TOTAL ... ..	430	68	1,860	1,066	24	11	9	2	1,513	300	80	9
<i>Daqahlia Province :—</i>												
Mansura district ... ..	128	24	18	3	8	2	...	...	54	17	53	22
Faraskur district ... ..	94	33	55	54	9	8	1	1	67	23	...	...
Simbellawein district	109	26	19	2	5	4	...	...	1	1	...	...
Aga district ... ..	163	35	...	...	1	1	...	...	15	1	...	...
Dekernes district ... ..	81	40	99	84	...	...	...	...	73	29	...	...
Mataria district ... ..	104	34	...	...	...	...	...	...	...	...	...	...
Mit Ghamr district ... ..	42	8	402	167	16	13	...	...	6	3	...	...
TOTAL ... ..	721	200	593	310	39	28	1	1	216	74	53	22
<i>Behera Province :—</i>												
Damanhur district ... ..	108	15	24	14	8	6	3	1	61	20	...	...
Shubrakhit district ... ..	112	14	87	57	1	...	1	1	106	24	...	...
Kafr el Dawar district	62	17	57	40	...	...	...	...	163	32	...	...
Abu Hommos district	102	8	5	5	...	...	...	...	303	43	...	...
Itai el Barud district	202	28	105	44	5	5	...	...	164	45	...	...
Rosetta district ... ..	4	2	221	117	2	...	...	...	43	17	...	...
Raml district ... ..	2	...	33	5	...	...	...	...	10	...	...	...
Mariut district ... ..	33	6	11	1	...	...	...	...	16	...	...	...
Siwa Oasis district ... ..	17	6	170	63	...	...	...	...	...	...	...	...
Delingat district ... ..	6	1	15	6	1	1	28	6	55	19	...	...
Kom Hamada ... ..	2	...	19	5	...	...	...	...	120	39	...	...
TOTAL ... ..	650	97	747	357	17	12	32	8	1,041	239	...	...
<i>Sharqia Province :—</i>												
Zagazig district ... ..	7	1	8	2	21	12	8	1	...	...	3	...
Hehia district ... ..	9	...	...	...	...	...	...	...	...	...	...	...
Minia el Qamh district	3	1	...	...	...	...	...	...	...	...	...	...
Faqus district ... ..	11	4	...	...	...	...	...	...	...	...	...	...
Belbeis district ... ..	1	...	138	79	2	2	...	...	90	16	...	...
TOTAL ... ..	31	6	146	81	23	14	8	1	90	16	3	...
Carried forward...	1,832	371	3,346	1,814	103	65	50	12	2,860	629	136	31



TABLE XXV (*continued*).

INCIDENCE OF INFECTIOUS DISEASES.

PROVINCE AND DISTRICT.	SMALLPOX.		MEASLES.		DIPHTHERIA.		TYPHOID FEVER.		TYPHUS (exanthematic).		RELAPSING FEVER.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
<i>Brought forward ...</i>	1,832	371	3,346	1,814	103	65	50	12	2,860	629	136	31
<i>Menufia Province :—</i>												
Shebin el Kom district	8	...	69	11	7	3	...	...	131	20	12	...
Ashmuni district ...	22	1	77	11	...	...	...	...	153	14	13	1
Quesna district... ..	13	1	194	59	1	1	...	...	86	13	...	...
Tala district ... ..	44	12	170	103	16	14	1	...	500	116	...	...
Mennuf district ... ..	4	...	87	19	13	10	...	...	175	88	...	...
TOTAL ... ..	91	14	597	203	37	28	1	...	1,045	251	25	1
<i>Giza Province :—</i>												
Giza district ... ..	...	...	124	67	9	5	1	...	12	2	...	...
El Saff district... ..	3	...	4	2	...	...	...	...	16	4	...	...
Embaba district ... ..	...	...	57	47	12	12	...	...	...	...	...	...
El Ayat district ... ..	...	...	70	47	...	...	...	...	3	2	...	...
TOTAL ... ..	3	...	255	163	21	17	1	...	31	8	...	...
<i>Qaliubia Province :—</i>												
Tukh district ... ..	41	5	208	56	41	24	6	...	24	8	7	...
Nawa district ... ..	2	...	575	145	...	...	...	...	...	...	16	1
Qaliub district ... ..	2	2	312	205	4	2	1	...	3	...	2	1
TOTAL ... ..	45	7	1,095	406	45	26	7	...	27	8	25	2
<i>Fayum Province :—</i>												
Fayum district... ..	14	2	17	7	19	13	1	...	3	1	...	...
Etsa district ... ..	8	1	17	8	...	...	2	2	2	1	...	...
Sennures district ... ..	20	12	4	4	4	3	11	11	22	22	1	1
TOTAL ... ..	42	15	38	19	23	16	14	13	27	24	1	1
<i>Beni Suef Province :—</i>												
Beni Suef district ... ..	24	5	5	1	5	...	...	...	33	4	3	...
Biba district ... ..	9	1	25	13	2	1	1	1	3	2	...	...
Wasta district ... ..	5	3	...	...	1	1	...	...	8	1	...	...
TOTAL ... ..	38	9	30	14	8	2	1	1	44	7	3	...
<i>Minia Province :—</i>												
Minia district ... ..	2	...	2	...	9	5	1	...	...	...	...	...
Maghagha district ... ..	18	3	...	...	...	...	...	...	...	...	...	...
Fashn district ... ..	3	...	19	5	...	...	...	...	57	13	...	...
Abn Qurqas district..	1	...	...	...	...	...	...	...	2	...	...	...
Beni Mazar district...	3	1	...	...	6	5	...	...	1	...	...	...
Baharia Oasis ... ..	6	2	...	...	9	5	...	...	13	2	...	...
TOTAL ... ..	33	6	21	5	24	15	1	...	73	15	...	...
<i>Carried forward...</i>	2,084	422	5,382	2,624	261	169	75	26	4,107	942	190	38

TABLE XXV (continued).

## INCIDENCE OF INFECTIOUS DISEASES.

PROVINCE AND DISTRICT.	SMALLPOX.		MEASLES.		DIPHTHERIA.		TYPHOID FEVER.		TYPHUS (exanthematic).		RELAPSING FEVER.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
<i>Carried forward ...</i>	2,084	422	5,382	2,624	261	169	75	26	4,107	942	190	38
<i>Assiut Province :—</i>												
Assiut district ... ..	...	...	23	9	...	...	2	1	1	...	1	...
Mallawi district ... ..	...	...	42	40	9	3	1	1	21	19	...	...
Deirut district ... ..	16	3	...	...	3	3	...	...	15	6	...	...
Dakhla Oasis district ...	...	...	521	179	...	...	...	...	...	...	...	...
Abu Tig district ... ..	11	5	2	...	1	1	...	...	...	...	...	...
Badari district ... ..	...	...	22	22	...	...	...	...	1	1	...	...
Manfalut district ... ..	1	...	272	133	2	2	...	...	47	12	...	...
Kharga Oasis district ...	1	...	3	2	1	1	...	..	83	22	1	...
Abnub district ... ..	...	...	141	96	...	...	...	...	59	19	...	...
<b>TOTAL ... ..</b>	<b>29</b>	<b>8</b>	<b>1,026</b>	<b>481</b>	<b>16</b>	<b>10</b>	<b>3</b>	<b>2</b>	<b>227</b>	<b>79</b>	<b>2</b>	<b>...</b>
<i>Girga Province :—</i>												
Sohag district ... ..	...	...	6	3	5	4	2	...	13	6	...	...
Girga district ... ..	...	...	99	79	13	12	...	...	18	11	...	...
Tahta district ... ..	10	2	451	350	6	6	...	...	53	21	...	...
Akhmin district ... ..	10	1	23	12	30	21	...	...	24	5	...	...
Baliana district ... ..	1	1	629	303	12	11	4	3	10	7	...	...
<b>TOTAL ... ..</b>	<b>21</b>	<b>4</b>	<b>1,208</b>	<b>747</b>	<b>66</b>	<b>54</b>	<b>6</b>	<b>3</b>	<b>118</b>	<b>50</b>	<b>...</b>	<b>...</b>
<i>Qena Province :—</i>												
Qena district ... ..	11	4	66	24	...	...	...	...	99	33	122	12
Nag Hamadi district ...	95	34	181	139	6	6	...	...	72	19	...	...
Qus district ... ..	136	41	52	12	6	6	...	...	120	28	...	...
Luxor district ... ..	35	6	52	49	6	2	2	2	17	5	3	...
Deshna district ... ..	1	1	22	22	...	...	...	...	66	12	...	...
Esna district ... ..	...	...	253	245	2	2	...	...	9	7	...	...
Qoseir district ... ..	1	...	...	...	...	...	...	...	63	15	...	...
<b>TOTAL ... ..</b>	<b>279</b>	<b>82</b>	<b>626</b>	<b>491</b>	<b>20</b>	<b>16</b>	<b>2</b>	<b>2</b>	<b>446</b>	<b>119</b>	<b>125</b>	<b>12</b>
<i>Aswan Province :—</i>												
Aswan district ... ..	18	6	20	1	2	1	3	...	4	1	...	...
Edfu district ... ..	24	8	22	22	...	...	...	...	...	...	...	...
Derr district ... ..	1	...	9	...	1	1	...	...	22	5	...	...
<b>TOTAL ... ..</b>	<b>43</b>	<b>14</b>	<b>51</b>	<b>23</b>	<b>3</b>	<b>2</b>	<b>3</b>	<b>...</b>	<b>26</b>	<b>6</b>	<b>...</b>	<b>...</b>
<b>GRAND TOTAL ... ..</b> (Including Governorates).	<b>2,758</b>	<b>592</b>	<b>8,382</b>	<b>4,380</b>	<b>623</b>	<b>329</b>	<b>248</b>	<b>60</b>	<b>5,012</b>	<b>1,222</b>	<b>533</b>	<b>55</b>



(i) PLAGUE.

Plague has now existed in Egypt since May 1899, *i.e.*, nearly thirteen years. Until 1902 it was confined to Lower Egypt, but in that year it extended to Middle and Upper Egypt, and in 1904 assumed comparatively extensive proportions in the province of Minia and certain districts of Girga and Qena.

The severity of the outbreak in this year led to more extensive and stringent precautions, and in 1905 comparatively few outbreaks or cases were reported from Upper Egypt. In the two following years there was a marked and increasing incidence of the disease, mainly in Upper Egypt, specially characterised by a great increase in the number of pneumonic cases; a fact which gave rise to great anxiety.

In the winter of 1907–1908 preparations were accordingly made instituting a specially organized plague service for Upper Egypt, and this came into operation with the plague season of 1908 with most satisfactory results; this organization continued in effective work the following year also, so that in 1909 the reduction in the incidence of the disease was particularly striking, *e.g.*, the pneumonic cases in 1907 numbered 252; in 1908 they were 168, while in 1909 no more than nine were reported, a fact which must be considered the direct result of the work of the Upper Egypt plague staff.

In 1910, however, the progress made was unfortunately not maintained, for the staff had then been reduced, and in reporting on the fact in March 1911, attention was directed to certain important aspects of the situation:—

“The importance of pneumonic plague is very great in this country. The havoc recently caused by the disease in Northern China and Manchuria and that which formerly occurred in the Punjab required no sensational writing to impress on Governments the necessity to do all that is possible to avoid similar disasters. The close connection between Egypt and the Sudan is therefore worthy of attention, for if pneumonic plague once effected its settlement in the Sudan, the black population, peculiarly susceptible to the disease, would certainly run the risk of its already all too scanty numbers being reduced to an insignificant remnant. The danger of transmission to the Sudan is directly proportionate to the prevalence of the disease in Upper Egypt.”

It was only natural, therefore, that some increase of the disease should have been anticipated for 1911, an anticipation which was unfortunately realized, but as a result of this fact and the representations made, it is most satisfactory to be now able to report that not only has the plague inspectorate staff been adequately re-established, but village discipline and the quickness and accuracy of “information” is vastly improved. These facts were clearly demonstrable during a recent inspection in Upper Egypt, and evidence thereof is already afforded by the increased effectiveness and facility with which it has been possible (with the marked exception of the districts of Qus and Abnub) this year (from 1912) to carry out plague operations.

As regards the details of the incidence of plague in 1911, Mr. Goodman, who is in charge of the “epidemic” (“A”) section of the Department, reports as follows:—

“The total number of declared cases of plague in 1911 was 1,656, as compared with 1,238 in 1910. The number of deaths was 1,041, showing a mortality of slightly over 60 per cent., compared with 615, or slightly under 50 per cent., in 1910.

“This is the greatest number of cases reported in Egypt in any one year, but as the number of localities infected was only 151, as compared to 147 in 1910, it is obvious that the increase was due to the severity of local outbreaks rather than to any great extension of the infected areas. The number of pneumonic cases in 1911 was 178, as compared to 147 in 1910, the cases being practically confined to Upper Egypt.

These low figures, considering the intense infectivity of this form of plague, reflects the greatest credit on the Divisional Inspectors in charge and those associated with them in the work.

“ Taking Minia southward as constituting Upper Egypt, the figures for Upper and Lower Egypt are as follows :—

TABLE XXVI.

	1910.	1911.
Lower Egypt ... ..	645	1,134
Upper Egypt ... ..	593	522

“ That is, in spite of the large increase of plague during 1911, the number of cases in Lower Egypt, with five-eighths of the total population, was actually less than in 1910.

“ If these figures are analysed still further the mudirias of Upper Egypt, Aswan and Qena, show 1,013 cases in 1911, against only 202 in 1910. This great increase was due to a severe bubonic and septicæmic outbreak at Kom Ombo (412), and one partly pneumonic at Qus (266).

“ The actual number of cases registered at Kom Ombo is in all probability much short of those actually occurring, for not only were many cases concealed at the commencement and secretly buried, but large numbers escaped and died elsewhere.

“ Kom Ombo, then, is the key to the plague season of 1911, and the conditions prevailing there call for some description. The Kom Ombo Estate consists of land recently reclaimed from the desert by the erection of a large pumping station for irrigation purposes ; as this land is brought under cultivation, every effort is made to recruit a population sufficient to supply the necessary labour. The recruiting is chiefly done in the mudirias of Aswan and Qena and, of necessity, those recruited belong to the most destitute and ill-nourished classes. The land is cultivated for the most part on the share system, but during harvest time a large supply of casual labour is required. The permanent population is housed in numerous “ ezbas ” erected by the Company : these ezbas, though intended to be of a superior type, were unfortunately built on the back-to-back system, and owing to certain faults in designing were almost destitute of light and air.

“ The conditions under which the plague epidemic at Kom Ombo commenced were, therefore :—

- “ (1) A virgin soil with a rat population not yet immunized to plague ;
- “ (2) A poorly-nourished population not yet strongly attached to their new homes, and therefore peculiarly liable to panic ;
- “ (3) Unhealthy conditions of housing.

“ To these conditions may be added the fact that the usual village organization was practically non-existent, for the omdas, being employees of the Company, were therefore to a very small degree under the control of the mudiria authorities : it is thus clear that the conditions which favour an epidemic of the severest type were present.

“ Notice of the first outbreak of plague was received on the 31st of January, although there is every reason to believe that it had existed for some time before that date : the disease rapidly spread, and it was not until a complete temporary re-housing of the inhabitants of the infected ezbas had been made that the epidemic was got under control ; the last case occurred on the 25th of April.

“ As a result of this epidemic a complete reorganization of the public health and administrative services on the Estate was made in agreement with the Company ; this reform will render future outbreaks much easier to deal with.



“ One of the lessons to be learnt from this epidemic is that the Government, in granting concessions which are likely to lead to the establishment of new centres of population, should insist on such conditions as will render a repetition of the Kom Ombo incident impossible.” \*

As a consequence of the increase of plague in 1910 and in 1911, the representations of the Department were acceded to, and it now possesses a superior staff which, after due training, should be adequate to the work and perfectly able to deal with any conditions of epidemic disease, excepting perhaps a severe outbreak of cholera, though even in such a case it should form a very effective framework round which would be built the larger organization required to deal with such an event.

In addition, also, the institution of a special investigational service (in connection with the Departmental Laboratories) has been effected with a main research station at Assint. This station is in charge of Dr. Petrie (from the Lister Institute) who has had considerable experience on the Plague Commission in India, and also in China and Mandchuria. Dr. Petrie is now engaged in the scientific investigation of the special problems which have arisen in connection with certain Upper Egypt outbreaks and has already arrived at some interesting results which will be published in due course.

Taking a general survey of the situation, it may be said that in Lower Egypt and certain parts of Upper Egypt plague is now endemic as the result of a persistent epizootic amongst the rat population. In other parts of Upper Egypt, plague cannot be said to be endemic, but is rather the local manifestation of an epidemic of the pneumonic form communicated from man to man by direct infection.

It has sometimes been suggested that radical measures for “ stamping out ” the disease should be undertaken — measures which, though they have not been clearly defined, could only be undertaken at incredible expense and certainly, in the present state of knowledge, with little prospect of permanent success. It is obvious that the facility, other things being equal, with which an outbreak of infectious disease, or indeed conflagration of any kind, is stamped out, must vary with the extent covered thereby, and the risk of subsequent re-imported infection into the sterilized area. It may be comparatively easy to stamp out a disease temporarily in a village, or even in a fair-sized township, providing adequate organization and material exist, but such measures as can be successfully put into operation in and over limited areas must be hopelessly inadequate and ruinously expensive if applied universally over even so small a country as Egypt. The plague and the rat epizootic have existed for many years in all parts of the world, *e.g.*, the Azores, Mauritius, Natal, Brazil, Chili, Ecuador, Peru, Trinidad, Venezuela, Arabia, China, Hong Kong, Mandchuria, British India, Dutch Indies, Annam, Cochin China, Saigon, Persian Gulf, Singapore, Bussorah, and Asiatic and European Russia. It may, therefore, now be said to be actually of world-wide distribution. In fact, although there is ample evidence in favour of operations for clearing up individual centres and keeping a wide control, there is at present no evidence whatsoever of any success attending proposals of a more extravagant nature. The true perspective, indeed, in which to regard the disease in this country, is, with little modification, that of any other infectious disease, such as typhus, measles, smallpox, or diphtheria ; †

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\* With reference to the last paragraph of Mr. Goodman's note, attention may be directed to the new settlements at Jemsa and Safaja, where a properly constituted administrative organization is urgently needed and which at the time of writing is actually in course of being established.

† In this connection it may be interesting to repeat the saying of Messrs. Notter and Firth (“The Theory and Practice of Hygiene,” London, 1908, p. 658) when discussing the epidemicity of such a disease as diphtheria: “The history of this affection indicates a tendency to cyclical epidemicity, though the cycles have extended over periods of various lengths, many of them only a few years, and others lasting several decades. This is particularly well shown in the experience of England, where localized outbreaks occurred from 1815 to 1825, after which the country was almost free from the disease until 1857, when, as part of a general prevalence over the whole of Europe, it appeared again. Since then, the disease has practically never been absent from this country, and at the present time shows distinct indications of a tendency to increase in prevalence.”

as such it can only be dealt with efficiently by a permanent, well-organized epidemic service with decentralized stores and staff in each province, backed up by a reserve of trained Medical Officers available at all times at head-quarters. Modern methods can undoubtedly control outbreaks (and they have undoubtedly removed much of the horror and mystery which surrounded the "Black Death" of the Middle Ages and its successors), but as yet they can no more stamp out with wide-sweeping power the rat epizootic that determines the existence of bubonic plague in man than they can remove at one blow the other maladies that beset humanity. But though it may not be practicable, or even possible, to suddenly abolish plague, it is certain that it, like other diseases, will yield ultimately to the advance of science, of social education, and to sanitary organization ; no mysterious panacea can be said to exist, but when the habits of the fellaheen make it impossible for the rat to find refuge in their houses the greatest step will have been made towards the abolition at least of human plague in Egypt.

The sound policy, therefore, with regard to dealing with plague in this country, is :—

- (1) To make practical use of the certain knowledge that has been acquired, and
- (2) To press inquiry into the unknown with persistency and determination.

Till the latter reveals facts which may justify a change in the established methods it is wiser to adhere to a system which has already given results of no little utility and at very moderate expense.

The following tables afford concise statistical information regarding the incidence of plague in the past and previous years :—

TABLE XXVII.

RECAPITULATION OF PLAGUE STATISTICS, 1899-1911.

Years.	Cases.	Deaths.	Deaths per cent.
1899 ... ..	93	45	48·0
1900 ... ..	127	60	47·2
1901 ... ..	205	102	49·5
1902 ... ..	481	291	60·0
1903 ... ..	303	160	52·7
1904 ... ..	854	501	58·6
1905 ... ..	266	181	68·0
1906 ... ..	631	475	75·2
1907 ... ..	1,253	914	72·9
1908 ... ..	1,511	780	51·6
1909 ... ..	513	207	40·5
1910 ... ..	1,238	615	49·6
1911 ... ..	1,656	1,041	63·6
TOTAL... ..	9,131	5,372	MEAN 58·8



TABLE XXVIII.

TOTAL CASES OF PLAGUE, FROM JANUARY 1ST TO DECEMBER 31ST, 1911 (FROM DAILY BULLETINS).

TOWN OR DISTRICT.	GOVERNORATE OR PROVINCE.	REMAIN- ING.		NEW CASES.		DEATHS IN HOSPITAL.		CURED.		REMAINING.			DEATHS OUT OF HOSPITAL.		TOTAL.
		Egyptians.	Foreigners.	Egyptians.	Foreigners.	Egyptians.	Foreigners.	Egyptians.	Foreigners.	Egyptians.	Foreigners.	Total.	Egyptians.	Foreigners.	
Cairo ... ..	Governorate	...	...	1	...	1	...	...	...	...	...	...	1	...	2
Alexandria ... ..	"	...	...	23	17	7	2	16	15	...	...	...	12	...	52
Port Said ... ..	"	...	...	31	5	9	4	22	1	...	...	...	5	1	42
Ismailia ... ..	"	...	...	1	...	...	...	1	...	...	...	...	...	...	1
Tanta ... ..	Gharbia	...	...	1	...	...	...	1	...	...	...	...	...	...	1
Kafr el Zayat ..	"	...	...	4	...	2	...	2	...	...	...	...	1	...	5
Sherbin ... ..	"	...	...	2	...	...	...	2	...	...	...	...	...	...	2
Damauhur ... ..	Behera	...	...	6	1	1	...	5	1	...	...	...	1	...	8
Shubrakhit ... ..	"	...	...	1	...	...	...	1	...	...	...	...	...	...	1
Aga ... ..	Daqahlia	...	...	6	...	2	...	4	...	...	...	...	1	...	7
Qaliub ... ..	Qaliubia	...	...	4	...	1	...	3	...	...	...	...	3	...	7
Tukh ... ..	"	...	...	4	...	...	...	3	...	1	...	1	...	...	4
Ashmun ... ..	Menufia	10	...	1	...	...	...	11	...	...	...	...	...	...	1
Shebin el Kom.	"	...	...	3	...	...	...	3	...	...	...	...	...	...	3
Quesna ... ..	"	...	...	2	...	...	...	2	...	...	...	...	...	...	2
Menuf ... ..	"	...	...	27	...	17	...	10	...	...	...	...	7	...	34
Tala ... ..	"	1	...	17	...	7	...	11	...	...	...	...	7	...	24
El Saff ... ..	Giza ...	...	...	3	...	...	...	3	...	...	...	...	...	...	3
Biba ... ..	Beni Suef...	1	...	4	...	1	...	4	...	...	...	...	1	...	5
Beni Suef ... ..	"	...	...	2	...	...	...	2	...	...	...	...	...	...	2
Wasta ... ..	"	...	...	1	...	...	...	1	...	...	...	...	...	...	1
Etsa ... ..	Fayum	...	...	7	...	3	...	4	...	...	...	...	3	...	10
Fayum ... ..	"	...	...	2	...	2	...	...	...	...	...	...	...	...	2
Sennures ... ..	"	...	...	18	...	7	...	11	...	...	...	...	22	...	40
Abu Qurqas ... ..	Minia	...	...	13	...	5	...	8	...	...	...	...	3	...	16
Beni Mazar ... ..	"	...	...	11	...	1	...	10	...	...	...	...	1	...	12
Fashn ... ..	"	...	...	29	...	4	...	25	...	...	...	...	2	...	31
Maghagha ... ..	"	...	...	1	...	1	...	...	...	...	...	...	...	...	1
Minia ... ..	"	...	...	21	...	8	...	13	...	...	...	...	3	...	24
Samalut ... ..	"	...	...	46	...	14	...	32	...	...	...	...	1	...	47
Abuub ... ..	Assiut	...	...	7	...	2	...	5	...	...	...	...	7	...	14
Abu Tig ... ..	"	...	...	3	...	1	...	2	...	...	...	...	...	...	3
Assiut ... ..	"	...	...	6	...	2	...	4	...	...	...	...	2	...	8
Deirut ... ..	"	9	...	57	...	25	...	41	...	...	...	...	24	...	81
Mallawi ... ..	"	...	...	8	...	2	...	6	...	...	...	...	5	...	13
Manfalut ... ..	"	4	...	89	...	46	...	46	...	1	...	1	23	...	112
Baliana ... ..	Girga...	...	...	1	...	1	...	...	...	...	...	...	2	...	3
Girga ... ..	"	...	...	5	...	3	...	2	...	...	...	...	4	...	9
Sohag ... ..	"	...	...	3	...	2	...	1	...	...	...	...	2	...	5
Talita ... ..	"	...	...	3	...	2	...	1	...	...	...	...	2	...	5
Deshua ... ..	Qena ...	...	...	4	...	3	...	1	...	...	...	...	6	...	10
Esna ... ..	"	...	...	39	...	13	...	26	...	...	...	...	2	...	41
Qena ... ..	"	...	...	73	...	69	...	4	...	...	...	...	33	...	106
Qus ... ..	"	...	...	210	...	150	...	60	...	...	...	...	56	...	266
Luxor ... ..	"	...	...	45	...	29	...	16	...	...	...	...	6	...	51
Nag Hamadi ...	"	...	...	35	...	25	...	10	...	...	...	...	10	...	45
Aswan ... ..	Aswan	...	...	352	...	208	...	144	...	...	...	...	60	...	412
Edfu ... ..	"	...	...	73	...	31	...	42	...	...	...	...	9	...	82
TOTAL ...		25	...	1,305	23	707	6	621	17	2	...	2	327	1	1,656

Number of cases, 1,656 ; number of deaths, 1,041 ; number cured, 638 ; cases under treatment, 2.

TABLE XXIX.

RECAPITULATION OF CASES OF, AND DEATHS FROM, PLAGUE IN EGYPT, 1899-1911.

TOWN OR DISTRICT.	GOVERNORATE OR PROVINCE.	NUMBER OF CASES IN :												NUMBER OF DEATHS IN :															
		1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	Total.	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	Total.
Cairo	Governorate...	...	...	...	...	...	...	1	...	...	...	...	...	2*	3	...	...	...	...	...	...	...	1	...	...	...	...	2	3
Alexandria	"	93	35	52	101	129	108	127	99	152	100	23	45	52	1,117	45	25	26	52	83	70	87	61	89	...	17	27	21	650
Port Said	"	...	90	26	1	33	22	14	14	19	13	26	28	12	328	35	35	16	1	13	16	12	11	15	8	15	13	19	171
Suez...	"	...	...	...	...	...	11	21	62	3	...	...	...	...	97	...	...	...	...	...	5	18	45	2	...	...	...	...	70
Ismailia	"	...	...	...	...	...	...	...	...	10	...	...	1	1	12	...	...	...	...	...	...	...	...	8	...	1	...	...	9
Damietta...	"	...	1	...	3	27	2	1	...	1	...	...	1	...	36	...	...	...	2	19	2	...	...	...	...	...	1	...	21
Tanta	Gharbia	...	...	9	95	13	...	...	18	11	33	7	19	1	206	...	...	4	79	7	...	16	10	...	9	4	12	...	141
Kafr el Zayat...	"	...	...	...	...	...	...	2	...	...	2	7	...	5	16	...	...	...	...	...	...	...	...	...	2	...	...	3	6
Sherbin	"	...	...	...	...	...	...	...	...	...	...	...	...	2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Zifta	"	...	...	10	12	...	...	4	...	...	25	...	...	...	151	...	...	8	10	...	...	1	...	...	...	13	20	...	64
Mohalla el Kobra...	"	...	...	...	9	...	...	...	...	...	...	...	...	...	9	...	...	...	3	...	...	...	...	...	...	...	12	...	...
Santa	"	...	...	...	2	...	...	...	...	...	14	1	42	...	59	...	...	...	1	...	...	...	...	...	5	1	12	...	3
Desuq	"	...	...	...	...	...	...	...	...	1	1	1	...	...	3	...	...	...	...	...	...	...	...	1	...	1	...	...	19
Damanhur	Behera	...	...	...	10	...	...	33	1	43	1	34	4	8	134	...	...	...	7	...	...	25	1	28	...	14	2	2	79
Shubrakhit	"	...	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abu Hommos	"	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Kom Hamada	"	...	...	...	...	...	...	...	...	...	19	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Itai el Barud...	"	...	...	...	...	...	...	...	...	...	1	...	...	...	19	...	...	...	...	...	...	...	...	...	7	...	...	...	7
Zagazig	Sharqia	...	...	77	...	...	95	...	...	...	...	...	...	...	172	...	...	32	...	...	37	...	...	...	...	...	...	...	...
Minia el Qanah	"	...	...	...	2	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...
Mansura	Daqahlia	...	...	1	...	...	...	...	...	...	1	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Fareskur	"	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mit Glamr	"	...	20	...	34	...	...	2	...	...	5	...	...	...	61	...	...	11	12	...	...	1	...	...	1	...	...	...	25
Aga	"	...	...	...	9	...	...	...	...	35	...	5	...	7	56	...	...	...	4	...	...	...	19	...	5	...	...	3	31
Dekernes	"	...	...	...	...	...	...	3	...	...	2	...	...	...	5	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Simbellawein...	"	...	...	...	...	...	...	...	...	14	...	...	...	...	14	...	...	...	...	...	...	...	9	...	...	...	...	...	9
El Mataria	"	...	...	...	...	...	...	...	...	...	...	...	3	...	8	...	...	...	...	...	...	...	...	...	...	...	2	...	2
Bedra	Qaliubia	...	...	5	14	...	...	...	...	...	12	...	...	...	31	...	...	3	7	...	...	...	...	...	7	...	...	...	17
Qaliub	"	...	...	...	37	1	23	...	...	...	1	...	1	7	10	...	...	...	19	1	12	...	...	...	...	...	...	1	5
Tukh	"	...	...	...	...	49	...	33	...	...	60	19	35	4	209	...	...	...	...	...	...	22	...	...	15	2	8	...	89
Nawa	"	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Shubin el Kom	Menoufia	...	...	...	1	...	12	...	...	...	...	...	4	3	20	...	...	...	1	...	4	...	...	...	...	...	3	...	8
Tala...	"	...	...	...	29	...	...	...	14	...	1	...	35	24	103	...	...	...	18	...	...	...	9	1	1	...	17	11	60





The seasonal incidence of plague is illustrated by the following graphic diagrams which adequately explain themselves. It will be noticed that in Upper Egypt the three months of March, April, and May, are those in which the disease is most prevalent, while in April it is at its height. In Lower Egypt the monthly variation is less marked, but still it is sufficient to show that June and July are those months when it is most prevalent.





DIAGRAM SHOWING  
MEAN MONTHLY PERCENTAGE OF YEARLY TOTAL OF PLAGUE  
CASES FROM 1899-1911

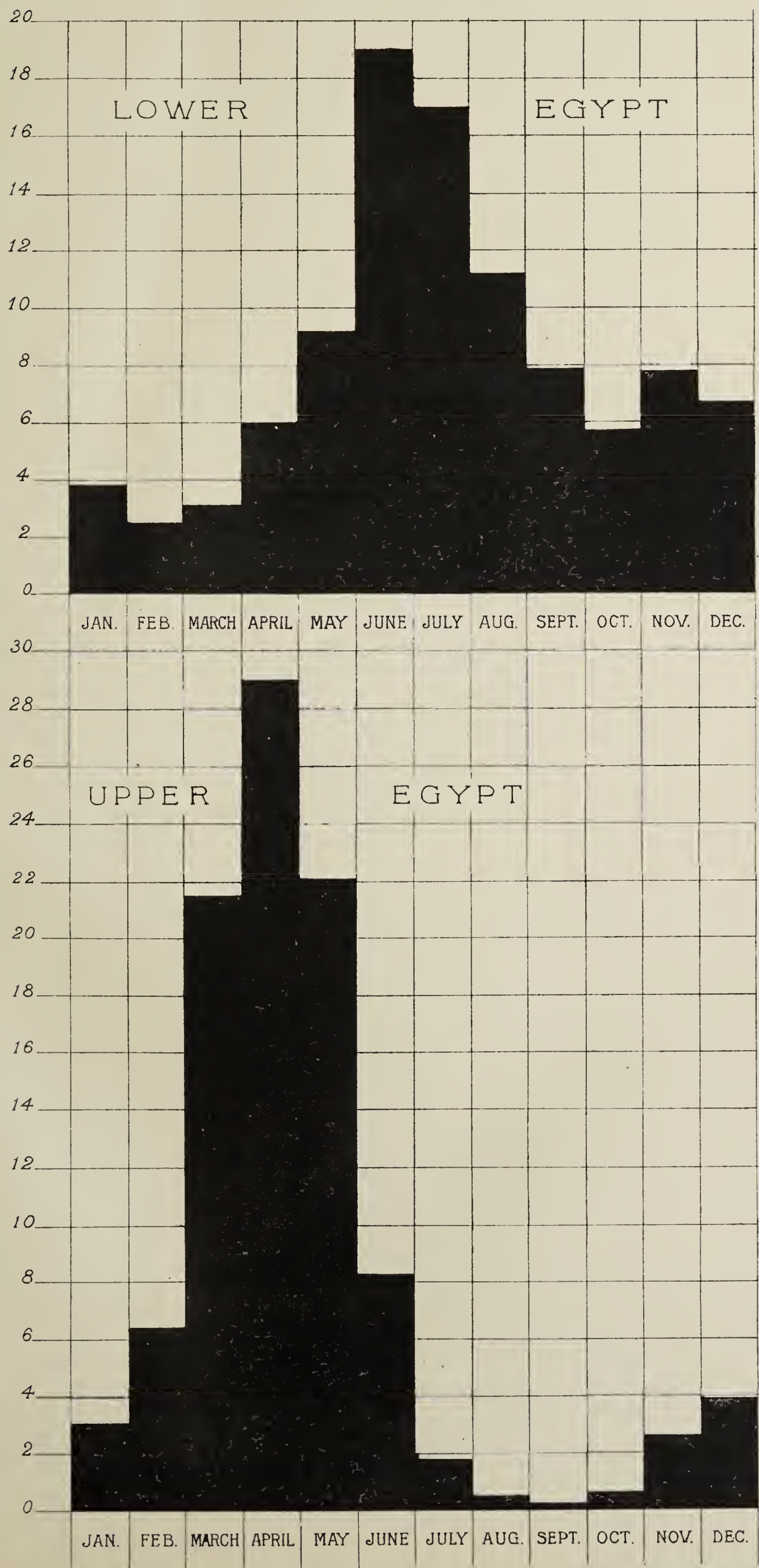






Table XXX represents the number of cases occurring month by month in each mudiria during the years 1899 to 1911, while the monthly percentage is also indicated in the lower lines of the table, in further illustration of the features shown by the preceding diagrams :—

TABLE XXX.

CASES AND DEATHS OF PLAGUE IN EGYPT DURING THE YEARS 1899-1911 (BY MONTH).

GOVERNORATES AND PROVINCES.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.		JULY.		AUGUST.		SEPT.		OCTOBER.		NOVEMBER.		DECEMBER.		TOTAL.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Cairo	...	...	(4) 1	(4) 1	...	...	(2) 1	(2) 1	...	...	(3) 1	(3) 1	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Alexandria	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Damietta	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Port Said	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Suez...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ismailia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Sharquia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Daqahlia...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gharbia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Menufia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Qaliubia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Behera	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Giza...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Fayyum	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Beni Suef	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Minia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Assiut	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Girga	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Qena	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aswan	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
GRAND TOTAL...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
% to Grand Total	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL FOR LOWER EGYPT...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
% to total for Lower Egypt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
TOTAL FOR UPPER EGYPT...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
% to total for Upper Egypt	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

(1) Arrived from Taba Shubra Village, Quesna District, Menufia Province. \* 14 cases arrived at Mallawi from Abnub (1910). 2 admitted, 3 deaths out of hospital. 3 admitted, 6 eat out of hospital.

(2) Found dead at Rod el Farag: arrived from Deshna District, Qena Province. 1 case arrived at Qas from Qena (1906).

(3) Arrived from Qalub District, Qaliubia Province. 1 " " " " Luxor (1910).

(ii) SMALLPOX AND VACCINATION.

A reference to Table VI will show that the number of cases of smallpox in 1911 was 2,758 as against 3,066 in 1910, of which only 22 occurred in Cairo, compared with 34 in the previous year.

1,004,000 units of vaccine were produced by the Vaccine Institute, of which 942,000 units were issued.

477,646 vaccinations and 3,447 re-vaccinations were returned as successful.

TABLE XXXI.

SUCCESSFUL VACCINATIONS AND RE-VACCINATIONS.			
VACCINATIONS.		RE-VACCINATIONS.	
1910.	1911.	1910.	1911.
467,390	477,646	4,041	3,447

29 ambulances, *i.e.*, tent hospitals, providing 370 beds, were issued from the Central Stores for dealing with outbreaks throughout the country.

It is worthy of notice that out of the 29 outbreaks for which ambulances were despatched, only two were sent south of Cairo, and that of the remaining 27, 19 were allotted to the Mudiria of Behera. In 1909 the Mudiria of Giza was specially affected with outbreaks of smallpox, and, as a consequence, when the plague season was over, the staff previously employed on that duty was drafted off for a campaign of re-vaccination. Since that time no outbreak other than a travelling case has occurred in that mudiria ; \* and it is proposed, as soon as the plague season of this year is over, to undertake a similar campaign in Behera, a province which is specially difficult to deal with on account of the large number of Bedwin distributed throughout a wide area where access is specially difficult.

(iii, iv) TYPHUS AND RELAPSING FEVERS.

Typhus fever showed a very considerable increase, both in case-incidence and in mortality, while relapsing fever, on the other hand, showed a very considerable reduction. The case-incidence of typhus fever in 1911 was 5,014, as against 2,833 in 1910, the mortality being 1,222 in 1911, as against 733 in 1910.

Of relapsing fever there were 534 cases in 1911, as against 926 in 1910, though there was an increase in the mortality figures, which were 55 in 1911, and 43 in 1910.

In connection with this considerable increase in typhus, it may be stated that in this case also the greater incidence of mortality occurred in the Lower Egypt mudirias, more especially in three marakiz of Gharbia, *viz.*, Kafr el Zayat, Talkha, and Tanta, in Behera, and in Menufia, where the occurrence of 500 cases in the Markaz of Tala was almost entirely due to the action of a private doctor at the village of Batanoun, and against whom the local authorities were at the time unable to take any effective action.

There is no doubt that the excessive mortality in the northern belt of the Delta is due to the conditions under which the fellaheen live during a great part of the year. Their houses are built, in many cases, especially in the region near the sea-board, for protection against wet and cold weather, and during the greater part of the season they live, and

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\* It is worthy of notice also that a re-vaccination campaign was undertaken in the Mudiria of Sharqia in 1908, since which time that mudiria has been comparatively free of the disease.



especially sleep, under conditions of considerable uncleanness and overcrowding. The essential elements for dealing with outbreaks of this disease is to be able to remove the sick and their contacts from their houses and isolate them under conditions of cleanliness and full ventilation. Where this can be done the sudden cessation of an outbreak of typhus fever is very marked, and in this way it closely resembles pneumonic plague. But it is specially difficult during the winter months to carry out these indispensable measures in the climate that then obtains in the district under consideration, for neither tents nor temporary huts are adequate for the purpose. Here again is a reason for hastening the provision of village shelters for the sick and developing the aptitude and sense of responsibility of the village barber.

92 tent hospitals providing 1,390 beds were issued from Central Stores during the year for the purpose of dealing with outbreaks of this disease.

#### (v) MEASLES.

There was a perceptible increase, both in the case-incidence of measles, namely 8,382 in 1911 as against 7,435 in 1910, and in the mortality, which was 4,380 in 1911 as against 3,553 in 1910. It would seem that the present tendency of measles is steadily to increase, for the deaths registered in 1909 were 2,240, while in 1908 they were 1,217. It is true that these figures can in no way be considered as absolutely correct, but there is no reason to regard them otherwise than as representing a general proportion of the actual amount of measles mortality. Indeed, this disease, after the "summer diarrhœa" which is so fatal in the first year of infancy, is the chief reason of death in young children. The immediate cause of death in measles is not so much the fever of the earlier stage, as the resulting susceptibility of the bronchial tract to a species of peculiarly fatal bronchial pneumonia in the post-febrile stage. It is at this moment that ordinary care on the part of parents in guarding against exposure would save the life of the child, and if only such precautions could be insured, there is little doubt that many of the deaths attributable to measles would no longer figure in the returns. Village and local authorities have frequently been circularized on this subject, and another circular reminding them of the instructions previously issued and the importance of carrying them out has been issued.

In the Report for 1909 this question is referred to in the following terms: "This malady is one of the most difficult of health problems to deal with in this country. Isolation and limitation of infection are practically impossible under the conditions of village life; while the ignorance and indifference of parents in neglecting simple precautions against exposure after the primary fever is over is the cause of the chest troubles and of the consequent very high mortality that characterizes the disease in this country."

It is to be hoped that with the help of the Provincial Councils and the wider spread of elementary education the causative factors of measles mortality may yet be reduced.

#### (vi) DIPHTHERIA.

In diphtheria there was a slight decrease in the case-incidence, which was 625 in 1911 as against 656 in 1910, while the mortality in 1911 was 329 as against 327 in 1910. In 1911, 86 cases were treated in the Infections Hospital, Cairo, against 40 in 1910, 74 in 1909, and 45 in 1908, the mortality being 35, 24, 41, and 30 respectively, which gives a percentage mortality of 67, 55, 60, and 40 per cent.

The decrease in case-mortality is undoubtedly due to the greater extent and promptness with which anti-diphtheria serum is provided and administered, and there is no doubt that in the districts where the cases come early to the notice of the Medical Officer many lives which otherwise would be lost are saved thereby, and further, that by prophylactic administration of the serum in case of contacts the incidence of the disease is thereby limited.

(vii) ENTERIC FEVER.

There is a marked diminution in the number of cases of enteric fever reported : 250 in 1911 as against 325 for 1910, with a mortality of 60 in 1911 as against 89 in 1910. The cases reported in Cairo alone show a considerable diminution—42 as against 54—notwithstanding the fact that notification has been considerably improved within the last year by enforcing the provisions of the law against those physicians who failed to notify their cases. It is satisfactory to remark that no extensive outbreak of the disease, such as occurred in the year 1909, has since taken place.

(viii) MALARIA AND MOSQUITOES.

As a consequence of the re-organization of the relegation settlement at Kharga Oasis and the sanitary measures there taken, there has been in 1911 no repetition of the outbreak of malaria which occurred in 1910.

As regards the Suez district, the following is an extract from Dr. Creswell's report on malaria prophylaxis in that area during 1911 :—

“The work has been a simple continuation of that of previous years.

“The endemic malaria has reached a vanishing point.

“There are two causes at work, independent of the prophylactic measures taken by us :—

“Firstly, the sweet water canal near Fayed (56 kilometres above Suez) got nearly blocked with sand in the early part of the year, and consequently all the irrigated land between that and Suez was short of water up to the autumn ; the amount of casual water which feeds the breeding-places of anopheles was therefore reduced to a minimum and many small marshes dried up :—

“Secondly, the pilgrimage being practically stopped, the number of infected people entering the district was greatly diminished.

“When the canal rose to its usual level in the early autumn the anopheles re-appeared, but no infection seemed to follow their late appearance, probably because there was already little if any original malaria existing.

“As regards the work done it may be said that :—

“(1) The length of the drains kept clear is 96 kilometres (60 miles) ;

“(2) The district dealt with could not usefully be enlarged ;

“(3) Arrangements were made for a weekly visitation by the District Inspector of the zone dealt with who, with the help of the barber, distributed quinine, if required.

“The cost of the work is :—

						L.E.	
Overseer...	...	...	...	...	...	72	per annum.
Workmen	...	...	...	...	...	34	„
TOTAL...						106	

“*Result.*—As is to be expected, the figures at my disposal show a continuous improvement on last year.

“The malaria deaths registered in Suez for the ten previous years are as follows :—

1901	...	...	...	46	1907	...	...	...	22
1902	...	...	...	61	1908	...	...	...	17
1903	...	...	...	54	1909	...	...	...	11
1904	...	...	...	81	1910	...	...	...	8
1905	...	...	...	50	1911	...	...	...	6
1906	...	...	...	38					

(Anti-malarial measures began).



“*Hospital Statistics.*—The malarial cases registered before the measures began were :—

	In-patients.	Out-patients.
1904... ..	118	405
1905... ..	91 { (measures began in spring).	260

“ After the measures began :—

1909... ..	65 { (measures extended 6 kilometres).	218
1910... ..	39	62
1911... ..	8	55

“The in-patient figures for 1911 do not include malaria cases landed from ships, and the out-patient cases include all chronic malaria and relapsing cases. Further, it is to be remembered that out-patient diagnoses are of necessity only provisional; subsequent examination of the blood not infrequently fails to confirm the original opinion.

“*Conclusion.*—We have arrived at a rather critical period in our malaria work. The complaints of the District Inspector of the difficulty in getting the farmers to clean the ditches themselves are well founded. With the possibility of having this done by our malarial gang, added to the fact that no malaria actually exists, it is very difficult to get farmers to work themselves, believing as they do that the disappearance of an evil means its final annihilation. They all say that the measure is an excellent thing. It keeps their land well drained and themselves free of fever, and some of the more intelligent of them believe this.

“There is a movement among the more advanced farmers for the inevitable arrêté to be made which will enable the Government to clean dirty ditches at the landowners’ expense, if the offenders do not clean them after proper notice has been given to them. Undoubtedly, when this opinion is more universal, it will be a good law to make, but it is early days for this, and I fear the agricultural public will require the experience of another bad epidemic before the demand becomes urgent.

“The real advance that has been made is recognition of the fact that ‘mosquitoes come from water and that malaria comes from mosquitoes,’ and this *obiter dictum* is gradually getting into the slowly-moving understanding of the fellaheen, so that when malaria re-appears they will probably bestir themselves to clean the ditches before the evil goes too far.

“*Petroleum Work against Culex.*—The expenses of this work have been as follows :—

	L.E.
Overseer ... ..	39
Petroleum... ..	147
Workmen... ..	53
Total ... ..	239

“During the year it was necessary to change the overseer, and he was accordingly replaced.

“The complaints of the presence of mosquitoes by inhabitants were more frequent during the last year. There are several causes of this, which are not altogether remediable :—

“Firstly, the inhabitants are more intolerant to mosquitoes than formerly :

“Secondly, the mosquitoes in their struggle for existence are always finding fresh breeding-places which are more difficult to find ;

“Thirdly, as we have not been able to get a local law for the proper construction of cesspits, mosquitoes can still breed in many of these ill-constructed fosses, in spite of gallons of petroleum poured into them.

“The more I see of petroleum the more I am convinced that it can only be looked upon as a temporary means of stopping mosquito-breeding. In Suez the problem would be solved by a proper drainage system and strict municipal regulations such as exist at Khartoum, where the householder is held responsible for his own mosquito breeding-places.”

With the general truth of Dr. Creswell's conclusions it is impossible not to agree. It is worthy of remark that with an expenditure of little more than a hundred pounds annually he is enabled to keep down malaria over an extensive district, while the somewhat limited area of Suez town consumes nearly two and a half times that amount over the few crude measures that are possible with a cesspit-petroleum system, and with little result to show for the expenditure.

The ordinary anti-mosquito measures (not connected with malaria) were continued as usual in certain parts of Cairo, while in Port Said and Helwan the duty has been handed over to the Municipalities concerned.

#### (ix) TUBERCULOSIS.

The question of the prevalence or otherwise of tuberculosis in Egypt has recently been raised and discussed in some of the local journals; the opinion has been expressed that the disease is of recent importation into the country and that it was assuming alarming proportions. In view of these opinions it is as well to state such facts as bear on the question, the points being :—

Firstly, whether tuberculosis is really a recently imported disease in this country ;

Secondly, whether it is on the increase or otherwise ;

Thirdly, whether in view of statistical comparisons with other countries there is any need for the alarm expressed in respect to its presenting any specially pronounced danger in Egypt.

As regards the first point, it is true that tuberculosis is not mentioned by the medical officers of Napoleon's expedition at the beginning of last century, but this evidence certainly is of negative value, more especially as these officers would naturally be concerned with the diseases and wounds usually connected with a military campaign. There are, however, reasons to believe that at a later date in the nineteenth century — about 1840 — a certain Dr. Pruner Bey published a monograph on phthisis in which he says :—

“La tuberculose doit être examinée ici d'autant plus spécialement que l'on a répandu jusqu'ici des avis erronés sur son existence dans les poumons, avis erronés dans ce sens, par exemple, que des temps les plus reculés jusqu'à nos jours on l'a cru très rare en Egypte.”

He subsequently goes on to describe the existence of the disease in terms which are classic, by stating that it is found less amongst the Egyptians than in the Negroes and other Sudanese tribes.

Further, in 1862, a French physician, Dr. Schnepf, describes phthisis as “one of the most dreaded maladies of Egypt, being according to his view more fatal than even dysentery, fever,” etc.

But perhaps the most interesting statement on this point is to be found in a paper by Major Cummins, R. A. M. C., published in *Transactions of the Society of Tropical Medicine and Hygiene*, Vol. No. 7, in which he says :—

“Von Becker has called attention to the small incidence of tuberculosis amongst the Egyptians in Egypt and contrasted it with the intense susceptibility to the disease shown by Berberines, and still more by Sudanese, when the latter are under Egyptian conditions of life. Still, tuberculosis exists and has long existed amongst the people of Egypt. Elliot Smith has found tubercular lesions in the bones of ancient Egyptians, and tuberculosis is common amongst cattle in Egypt.”



It seems certain, therefore, that tuberculosis is by no means a new disease in Egypt.

As regards the second point, that is to say whether tuberculosis is largely on the increase, the following tables, Nos. XXXIII and XXXIV, present certain information. Table XXXII refers to Alexandria alone, and from it will be gathered that from the year 1901 until the year 1910 the average death-rate of Europeans from tuberculosis was 1·4 per thousand, while for the same period the death-rate of natives was about 2·5 per thousand. By following the figures through the sequence of years it will be seen that there is no reason to regard the mortality as being on the increase, more especially amongst the Europeans. As regards the figures for the natives it must be recognized that more than 80 per cent. of these people die without having been seen by a physician, and, consequently, the diagnosis being made post-mortem, it is far from being reliable.

TABLE XXXII.

POPULATION AND MORTALITY FROM TUBERCULOSIS AT ALEXANDRIA.

YEAR.	POPULATION.			TOTAL DEATHS.	DEATHS FROM TUBERCULOSIS.			MORTALITY <sup>0/100</sup> FROM TUBERCULOSIS.		
	Natives.	Europeans.	Total.		Natives.	Europeans.	Total.	Natives.	Europeans.	Total.
1901	292,916	46,118	339,034	11,381	781	105	886	2·7	2·3	2·6
1902	294,105	50,000	344,105	12,498	790	94	884	2·7	1·9	2·6
1903	298,300	51,000	349,300	10,088	743	79	822	2·5	1·5	2·4
1904	303,784	52,250	356,034	12,432	753	74	827	2·5	1·4	2·3
1905	309,250	53,500	362,750	10,926	639	76	715	2·1	1·4	2·0
1906	308,533	62,000	370,533	11,682	563	84	647	1·8	1·4	1·7
1907	310,085	66,000	376,085	13,219	725	88	813	2·3	1·3	2·2
1908	320,434	69,500	389,934	11,027	850	91	941	2·7	1·3	2·5
1909	320,121	71,100	391,121	12,960	888	79	967	2·8	1·1	2·5
1910	319,087	71,650	390,737	12,691	830	92	922	2·6	1·3	2·4

Table XXXIII gives the mortality from tuberculosis in the principal towns in Egypt from the year 1886 to the present time. It is divided into two sections, that for natives and that for foreigners. In the case of natives a distinct diminution is to be registered in the deaths in Cairo from this cause. In Alexandria, during the same period, there is an oscillation involving a rise in the middle of the period with a slow fall in the last quinquennium, while the same may be said of the general tuberculosis mortality of the other towns of the country. As regards the foreigners, Cairo would appear to show a slight oscillation with a decided diminution in the last quinquennial period. The same may be said of Alexandria, and a similar conclusion is to be drawn from the figures regarding the other towns.

Table XXXIV represents the cases of tuberculosis in various hospitals in Cairo and Alexandria over a varying period of years. From these, it would appear that in Cairo Government Hospital a marked diminution of tuberculosis mortality is to be registered. In the Alexandria Government Hospital the diminution is equally marked. In Cairo Deaconesses' Hospital there is also a marked diminution, and in the Alexandria Deaconesses' Hospital there is still a diminution, but less marked. In the Austrian Hospital, in Cairo, which deals with a large number of the poorest class of Europeans, there is an oscillation with a diminution in the last period, while in the European Hospital at Alexandria as well as the Greek Hospital at the same place there appears to be a rise in the mortality under consideration.

With regard to these latter tables it should be remarked that they deal of course with what may be called a selected population (*i.e.*, a hospital population), and therefore, though

a certain importance may be given to the figures, care should be taken not to generalise conclusions in the sense of regarding these figures as indicating the true incidence of tuberculosis over a wide area.

Finally, attention may be drawn to Table XXXV\* in which the mortality from phthisis is given for the various towns and countries of Europe. It is unnecessary to dilate on these figures, but very little examination will establish the fact that Egypt by no means suffers from its comparison, for with the possible exception of Australia, from whence the returns are limited, it has demonstrably the lowest mortality from this particular form of disease.

It may safely be said, therefore, that there is no reason for disquietude, still less for alarm, as regards any hypothetical increase in the disease in this country; but though this be true, it is none the less true that such measures as are taken by the Anti-tuberculosis Society are of an invaluable nature and deserve to obtain more widespread influence. It is in these directions that private charity and enterprise can most usefully employ itself and for that reason justifies all the support that is extended to the Society.

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\* In considering these statistics it should be noted that the Egyptian figures include all cases of tuberculosis. The returns of other countries include only pulmonary phthisis, except Algiers, Oran, Constantine 1895-1897, Tokio 1907-1909, Madrid 1898-1900, and San Francisco 1886-1900, where all cases of tuberculosis are given.





TABLE XXXIII.  
MORTALITY FROM TUBERCULOSIS IN SOME TOWNS OF EGYPT.

Natives.

TOWN.	MEAN POPULATION.	YEARS.	TOTAL MORTALITY PER 1,000 INHABITANTS.						MORTALITY FROM TUBERCULOSIS PER 10,000 INHABITANTS.						DEATHS FROM TUBERCULOSIS PER 100 TOTAL OF DEATHS.													
			1891-1895		1896-1900		1901-1905		1906-1910		1891-1895		1896-1900		1901-1905		1906-1910		1886-1890		1891-1895		1896-1900		1901-1905		1906-1910	
			1886-1890	1891-1895	1896-1900	1901-1905	1906-1910	1886-1890	1891-1895	1896-1900	1901-1905	1906-1910	1886-1890	1891-1895	1896-1900	1901-1905	1906-1910	1886-1890	1891-1895	1896-1900	1901-1905	1906-1910	1886-1890	1891-1895	1896-1900	1901-1905	1906-1910	
Cairo ... ..	605,685	1906-1910	40.8	37.7	36.9	36.8	40.7		32.8	28.3	23.5	22.1	21.7		8.0	7.5	6.4											
Alexandria...	311,211	1906-1910	39.2	34.7	33.7	36.0	36.4		21.6	19.6	23.6	25.4	24.8		5.5	5.6	7.0											
Damietta ... ..	30,326	1906-1910	34.2	37.9	26.5	30.7	27.3		12.3	22.1	11.4	9.7	10.3		3.6	5.8	4.3											
Port Said ... ..	40,184	1906-1910	27.3	25.7	26.2	27.7	29.6		15.1	13.2	13.5	11.3	12.9		5.5	5.1	5.1											
Other Towns, including Damietta and Port Said, except Ismailia...	485,400	1906-1910	36.4	36.2	36.0	37.9	39.6		14.6	15.4	16.7	16.0	13.9		4.0	4.3	4.6											

Foreigners.

Cairo ... ..	58,410	1906-1910	19.8	22.3	23.1	17.6	15.6		19.5	20.5	22.0	18.3	13.8		9.9	9.2	9.5	10.4	8.9
Alexandria... ..	65,395	1906-1910	18.3	18.8	19.0	16.9	15.3		15.6	18.2	17.2	15.1	13.3		8.5	9.7	9.1	8.9	8.7
Damietta ... ..	253	1906-1910	13.6	21.0	13.9	14.0	12.6		—	—	—	8.3	7.9		—	—	—	5.9	6.3
Port Said ... ..	10,724	1906-1910	20.7	20.3	15.2	19.7	15.4		16.0	17.4	13.3	18.6	12.7		7.7	8.6	8.8	9.4	8.2
Other Towns, including Damietta and Port Said, except Ismailia ...	20,823	1906-1910	20.2	20.9	17.3	19.9	16.8		14.5	17.7	13.6	15.7	11.7		7.1	8.5	7.9	7.9	7.0

TABLE XXXIV.

TUBERCULOSIS IN HOSPITALS.

CAIRO.

Government Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1889-1890 ...	7,964	1,096	13·8	771	9·7	297	38·5	29·1
1896-1898 ...	13,745	1,313	9·6	531	3·6	215	40·5	16·4
1906-1910 ...	35,694	3,271	9·2	808	2·3	272	33·7	8·3

Deaconesses' Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1892-1899 ...	1,612	147	9·1	113	7·0	30	26·6	20·4
1896-1900 ...	3,018	211	6·9	193	6·4	43	22·3	20·4
1901-1905 ...	4,209	304	7·2	193	4·6	31	16·1	10·2
1906-1910 ...	5,877	304	5·1	131	2·2	22	16·8	7·2

Austrian Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1889-1890.	333	26	8·0	24	7·8	6	25·0	23·1
1891-1894.	710	80	11·3	52	7·3	33	63·5	41·5
1896-1900.	1,752	172	9·8	147	8·4	53	36·0	30·8
1901-1905.	3,275	...	...	262	8·0	...	...	...
1906-1910.	4,671	...	...	386	8·2	...	...	...
1909-1911.	2,205	205	9·3	204	9·3	54	26·4	26·3

ALEXANDRIA.

Government Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1889-1890 ...	6,636	631	10·5	309	5·1	131	42·4	20·8
1896-1898 ...	9,314	1,034	11·1	180	1·9	98	54·4	9·4
1906-1910 ...	26,873	1,720	6·4	424	1·6	128	30·1	7·4

European Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1900-1905 ...	5,096	561	11·1	187	3·7	80	42·8	14·3
1906-1910 ...	6,567	564	8·6	265	4·0	96	35·9	17·0
1911 ... ..	1,180	115	9·8	51	4·3	17	33·3	14·8

Greek Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1893-1897 ...	6,409	689	10·7	...	...	121	...	17·6
1900-1905 ...	11,145	118	10·6	...	...	219	...	18·4
1906-1910 ...	12,660	1,313	10·4	...	...	254	...	19·3

Deaconesses' Hospital.								
YEARS.	ALL DISEASES.			TUBERCULOSIS.				
	Treated.	Deaths.	%	Treated.	% Total.	Deaths.	%	To Total Deaths.
1896-1900 ...	6,107	347	5·7	216	3·5	52	24·1	15·7
1901-1905 ...	7,543	414	5·5	283	3·7	81	28·6	19·6
1906-1910 ...	9,383	397	4·2	232	2·5	50	21·5	12·6



TABLE XXXV.

TOTAL MORTALITY AND MORTALITY FROM TUBERCULOSIS IN EGYPT  
AND FROM PULMONARY PHTHISIS IN OTHER COUNTRIES.

COUNTRY.	TOWN.	MEAN POPULATION.	YEARS.	TOTAL MORTALITY ‰ INHABITANTS.			MORTALITY FROM PHTHISIS * ‰.			DEATHS FROM PHTHISIS * PER 100 OF TOTAL DEATHS.		
				1886- 1890	1896- 1900	1906- 1910	1886- 1890	1896- 1900	1906- 1910	1886- 1890	1896- 1900	1906- 1910
Egypt.	Cairo... ..	Nat. 605,685	1906-10	40·8	36·9	40·7	32·8	23·5	21·7	8·0	6·4	5·3
		For. 58,410	1906-10	19·8	23·1	15·6	19·5	22·0	13·8	9·9	9·5	8·9
	Alexandria ... ..	Nat. 311,211	1906-10	39·2	33·7	36·4	21·6	23·6	24·8	5·5	7·0	6·8
		For. 65,395	1906-10	18·3	19·0	15·3	15·6	17·2	13·3	8·5	9·1	8·7
	Port Said... ..	Nat. 40,184	1906-10	27·3	26·2	29·6	15·1	13·5	12·9	5·5	5·1	4·4
		For. 10,724	1906-10	20·7	15·2	15·4	16·0	13·3	12·7	7·7	8·8	8·2
	Damietta ... ..	Nat. 30,326	1906-10	34·2	26·5	27·3	12·3	11·4	10·3	3·6	4·3	3·8
		For. 253	1906-10	13·6	13·9	12·6	—	—	7·9	—	—	6·3
	Other towns, except Cairo and Alexandria	Nat. 485,400	1906-10	36·4	36·0	39·6	14·6	16·7	13·9	4·0	4·6	3·5
		For. 20,823	1906-10	20·2	17·3	16·8	14·5	13·6	11·7	7·1	7·9	7·0
Mediterranean.	Athens ... ..	165,400	1905-9	20·8	23·3	22·9†	27·2	35·5	30·0†	13·1	15·2	13·1†
	Trieste ... ..	206,007	1905-9	30·4	27·5	25·5	49·1	40·2	37·6	16·2	14·6	14·7
	Venice ... ..	162,680	1905-8	(1) 28·6	23·0	23·2	31·1	20·7	19·6	10·9	9·0	8·4
	Naples ... ..	598,099	1905-9	28·8	26·0	24·1	27·5	19·7	13·8	9·5	7·6	5·7
	Genoa ... ..	273,901	1905-9	26·6	21·2	20·6	19·0	22·1	22·1	7·1	10·4	10·8
	Palermo ... ..	328,871	1906-8	(1) 24·0	21·6	21·2	19·7	17·4	19·0	8·2	8·1	9·0
	Malta ... ..	205,134	1905-8	—	27·0	28·3	—	20·6	13·6	—	7·6	4·8
	Marseilles ... ..	517,498	1905-7	(2) 28·3	25·0	23·4	26·1	17·2	23·0	9·2	6·9	9·8
	Nice ... ..	134,232	1905-8	(2) 24·7	24·1	20·2	25·4	23·6	27·8	10·3	9·8	13·8
	Barcelona ... ..	543,613	1905-9	30·1	26·8	25·4	—	—	23·3	—	—	9·2
Algeria.	Algiers ... ..	92,236	1895-97	(2) 31·2	(3) 24·4	—	34·1	30·0	—	10·9	12·3	—
	Constantine... ..	50,275	1895-97	(2) 41·6	(3) 30·5	—	16·7	54·5	—	4·0	17·9	—
	Oran ... ..	81,254	1895-97	(2) 34·6	(3) 28·9	—	24·3	15·0	—	7·0	5·2	—
Italy.	Venice ... ..	162,680	1905-8	(1) 28·6	23·0	23·2	31·1	20·7	19·6	10·9	9·0	8·4
	Palermo ... ..	328,871	1906-8	(1) 24·0	21·6	21·2	19·7	17·4	19·0	8·2	8·1	9·0
	Genoa ... ..	273,901	1905-9	26·6	21·2	20·6	19·0	22·1	22·1	7·1	10·4	10·8
	Milan ... ..	561,638	1905-9	27·8	22·0	20·3	29·9	20·0	23·0	10·7	9·1	11·3
	Rome ... ..	507,210	1905-9	(1) 29·4	17·4	16·9	27·4	16·0	13·8	9·3	9·2	8·2
	Turin ... ..	375,222	1905-9	23·9	19·3	19·1	22·5	22·9	18·4	9·4	11·9	9·6
Spain.	Barcelona ... ..	543,613	1905-9	30·1	26·8	25·4	—	—	22·3	—	—	9·2
	Madrid... ..	568,281	1906-9	—	(4) 31·5	27·5	—	34·4	26·3	—	10·9	9·6

\* See foot-note on page 72.  
† Where it has not been possible to obtain details for the full period 1906-1910, the figures in these columns apply to the period indicated in the column headed "Years."  
(1) Calculated on the years 1887-1889.—(2) Calculated on the years 1887-1890.—(3) Calculated on the years 1895-1897.—  
(4) Calculated on the years 1898-1900.

TABLE XXXV (continued).

TOTAL MORTALITY AND MORTALITY FROM TUBERCULOSIS IN EGYPT  
AND FROM PULMONARY PHTHISIS IN OTHER COUNTRIES.

COUNTRY.	TOWN.	MEAN POPULATION.	YEARS.	TOTAL MORTALITY			MORTALITY FROM			DEATHS FROM		
				% <sub>100</sub> INHABITANTS.			PHTHISIS % <sub>1000</sub> .			PHTHISIS PER 100 OF TOTAL DEATHS.		
				1886- 1890	1896- 1900	1906- 1910	1886- 1890	1896- 1900	1906- 1910	1886- 1890	1896- 1900	1906- 1910
France.	Bordeaux ... ..	251,947	1905-7	(1) 22·5	21·1	21·1*	33·0	22·6	26·3*	14·7	10·7	12·5*
	Havre ... ..	132,430	1905-7	30·6	28·0	24·0	48·0	50·4	40·5	15·7	18·0	16·9
	Lyons ... ..	472,114	1905-7	22·9	19·9	20·2	40·0	35·4	35·7	17·5	17·8	17·7
	Marseilles ... ..	517,498	1905-7	(1) 28·3	25·0	23·4	26·1	17·2	23·0	9·2	6·9	9·8
	Nancy ... ..	101,526	1905-9	24·9	21·7	24·8	35·7	34·9	29·5	14·3	16·1	11·9
	Nice ... ..	134,232	1905-8	(1) 24·7	24·1	20·2	25·4	23·6	27·8	10·3	9·8	13·8
	Paris ... ..	2,735,165	1905-9	23·0	19·2	17·7	44·0	37·8	35·0	19·1	19·7	19·7
Great Britain and Ireland.	Belfast ... ..	373,003	1905-9	24·4	23·4	19·8	40·2	32·9	25·5	16·5	14·1	12·8
	Birmingham ... ..	553,224	1905-9	20·3	26·5	16·1	16·9	14·8	13·0	8·3	7·2	8·1
	Bristol ... ..	368,029	1905-9	19·5	17·3	13·9	16·6	13·4	10·8	8·5	7·8	7·8
	Dublin ... ..	388,312	1905-9	26·6	25·6	21·9	34·1	31·7	28·1	12·8	12·4	12·9
	Edinburgh ... ..	345,812	1905-9	19·7	19·0	15·8	19·1	18·7	12·4	9·7	9·8	7·9
	Glasgow ... ..	844,986	1905-9	23·6	21·3	17·9	25·0	19·5	14·7	10·6	9·2	8·2
	Liverpool ... ..	746,520	1905-9	25·5	22·7	18·9	22·5	18·2	15·3	11·3	8·0	8·1
	London... ..	4,758,785	1905-9	19·7	18·5	14·5	19·7	17·5	13·8	10·0	9·5	9·5
	Manchester ... ..	648,863	1907-9	23·6	22·7	18·0	22·4	20·4	16·9	9·5	9·0	9·4
	Portsmouth... ..	208,321	1905-9	18·6	18·0	15·1	18·1	15·4	14·2	9·7	8·6	9·4
Belgium.	Brussels ... ..	179,977	1905-9	24·3	19·5	18·6	36·3	27·5	20·6	14·9	14·1	11·1
Holland.	Amsterdam ... ..	562,563	1905-9	22·4	16·7	13·5	23·4	18·5	14·1	10·4	11·1	10·5
	Rotterdam ... ..	395,691	1905-9	22·0	18·0	13·9	19·2	17·0	12·9	8·7	9·4	9·3
	The Hague ... ..	251,369	1905-9	20·8	16·2	13·1	17·9	16·0	12·8	8·6	9·9	9·6
Germany.	Berlin ... ..	2,076,200	1905-9	22·4	18·1	14·8	29·9	21·7	18·8	13·3	12·0	12·7
	Charlottenburg ... ..	255,448	1905-9	24·8	15·2	12·0	23·3	12·9	11·5	9·4	8·5	9·5
	Leipzig... ..	518,682	1905-9	21·1	19·6	15·6	30·5	22·7	18·2	14·5	11·6	11·6
	Munich... ..	552,400	1905-9	28·3	23·8	18·3	34·9	30·3	24·3	12·3	12·7	13·3
	Stuttgart ... ..	262,901	1905·9	19·6	18·3	16·1	25·9	20·1	16·6	13·2	11·0	10·3
	Breslau... ..	485,256	1905-9	28·8	25·0	21·5	31·3	32·5	28·5	10·9	13·0	13·2
	Bremen... ..	223,055	1905-9	19·1	16·7	15·5	35·2	23·4	16·5	18·4	14·0	10·7
	Hamburg ... ..	841,420	1905-9	25·3	17·6	15·1	31·0	20·0	14·3	12·3	11·4	9·5
	Kiel ... ..	173,675	1905-9	22·5	17·0	14·6	21·7	14·9	10·5	9·6	8·8	7·2
	Danzig ... ..	165,176	1905-9	28·4	23·6	20·8	25·5	20·5	19·5	9·0	8·7	9·4
	Dresden ... ..	529,750	1905-9	22 1	19·1	15·4	33·4	24·7	19·5	15·1	12·9	12·6
Austria-Hungary.	Budapest ... ..	802,097	1905-9	30·8	21·6	19·7	59·2	37·6	36·6	19·2	17·4	18·6
	Trieste ... ..	206,007	1905-9	30·4	27·5	25·5	49·1	40·2	37·6	16·2	14·6	14·7
	Prague ... ..	454,506	1905-8	26·9	20·3	17·1	62·6	48·3	39·9	23·3	23·8	23·3
	Vienna ... ..	1,979,918	1905-9	25·5	21·1	17·7	58·5	38·1	29·0	23·4	18·1	16·4

(1) Calculated on the years 1887-1890.

\* See foot-note (†) on page 75.



TABLE XXXV (continued).

TOTAL MORTALITY AND MORTALITY FROM TUBERCULOSIS IN EGYPT  
AND FROM PULMONARY PHTHISIS IN OTHER COUNTRIES.

COUNTRY.	TOWN.	MEAN POPULATION.	YEARS.	TOTAL MORTALITY ‰ INHABITANTS.			MORTALITY FROM PHTHISIS ‰.			DEATHS FROM PHTHISIS PER 100 OF TOTAL DEATHS.		
				1886- 1890	1896- 1900	1906- 1910	1886- 1890	1896- 1900	1906- 1910	1886- 1890	1896- 1900	1906- 1910
Russia.	Moscow ... ..	1,347,201	1905-9	33·6	28·7	27·5*	39·3	32·4	26·0*	11·7	11·3	9·4*
	Odessa ... ..	465,000	1905-8	26·4	22·9	22·4	—	27·6	29·8	—	12·1	13·3
	Saint Petersburg ... ..	1,507,889	1905-9	26·9	24·9	25·5	47·0	33·0	30·2	17·5	13·3	11·8
	Varsovia ... ..	758,941	1905-9	26·0	22·1	20·1	31·7	22·7	23·3	12·2	10·3	11·6
Norway and Sweden.	Christiania ... ..	183,250	1905-8	22·3	17·5	14·4	28·7	27·4	23·4	12·9	15·7	16·2
	Göteborg ... ..	155,557	1905-9	17·9	16·9	15·0	30·8	26·7	25·5	17·2	15·8	17·0
	Stockholm ... ..	332,750	1905-9	21·2	18·2	15·3	30·3	24·6	22·7	14·3	13·5	14·8
	Copenhagen... ..	438,400	1905-9	22·3	17·6	15·5	24·6	18·0	14·4	11·0	10·2	9·3
Greece.	Athens ... ..	165,400	1905-9	20·8	23·3	22·9	27·2	35·5	30·0	13·1	15·2	13·1
Roumania.	Bukharest ... ..	294,772	1905-9	28·1	26·7	24·5	42·9	37·8	41·1	15·3	14·2	16·8
Switzerland.	Zurich ... ..	175,170	1905-9	20·2	16·9	13·2	29·5	23·4	17·3	14·6	13·8	13·1
	Bale ... ..	125,335	1905-9	19·2	16·5	13·0	26·6	22·8	16·1	13·9	13·8	12·4
	Towns (18) over 10,000 ...	849,658	1905-9	21·2	16·6	14·5	31·5	23·7	19·8	14·9	14·2	13·7
America.	New York ... ..	4,387,084	1905-9	25·8	20·3	17·1	35·0	24·2	20·1	13·6	11·9	11·7
	Chicago ... ..	—	—	19·5	15·2	14·5	17·7	15·4	—	9·1	10·1	—
	Philadelphia ... ..	—	—	20·6	19·2	—	26·9	21·0	—	13·1	10·9	—
	Boston ... ..	625,512	1905-9	23·5	20·9	18·2	37·7	24·0	17·9	16·0	11·5	9·8
	San Francisco ... ..	—	—	18·4	18·4	—	30·6	31·9	—	16·6	17·4	—
Canada.	Montreal ... ..	359,209	1905-9	26·7	23·1	22·7	25·6	25·0	18·0	9·6	10·8	7·9
	Toronto ... ..	—	—	20·1	14·6	—	20·7	23·4	—	10·3	16·0	—
Brazil.	Rio de Janeiro ... ..	—	—	33·1	29·2	23·1	—	47·4	44·0	—	16·2	19·0
	Buenos-Ayres ... ..	1,134,628	1905-9	28·8	<sup>(1)</sup> 18·2	15·8	23·9	17·8	17·8	8·3	9·8	11·3
Australia.	Sydney... ..	578,495	1906-9	17·9	12·1	10·5	15·7	9·8	7·2	8·8	8·1	6·9
	Melbourne ... ..	—	—	21·0	15·5	<sup>(2)</sup> 13·1	21·3	15·3	10·9	10·1	9·9	8·3
Japan.	Tokio ... ..	2,186,079	1907-9	—	—	15·2	—	—	32·0	—	—	21·1
	Yokohama ... ..	377,236	1906-8	—	—	14·5	—	—	22·7	—	—	15·7
Philippine Islands.	Manilla... ..	228,975	1907-9	—	—	37·7	—	—	46·0	—	—	12·2

(<sup>1</sup>) Calculated on the years 1896-1899.—(<sup>2</sup>) Calculated on the years 1906-1910.  
\* See foot-note (†) on page 75.

### C.—SANITARY DEFENCE.

Reference has frequently been made in the various Reports of this Department to the very special reasons which render it necessary for the country to be furnished with a strong and efficient organization for sanitary defence, and stress has been laid on the now undisputed fact that security cannot be assured to a country itself, or to those with which it is in communication, by simple measures of "quarantine" alone, but that the true safeguard of national health is to be found in the soundness and efficiency of the internal sanitary organization. It was therefore with considerable interest that the projected meeting in Paris of the International Conference was awaited. This Conference was preceded by a special meeting of the Paris International Office of Hygiene, which was held expressly for the purpose of discussing general questions of sanitary policy preliminary to the meeting of the Conference later in the year. The general trend of the discussion is fairly reflected by the following extracts from the minutes (translated from the French) :— \*

Dr. Calmette, the distinguished French scientist and Algerian delegate, said :—

"The knowledge of germ-carriers furnishes proof that defence against cholera by means of quarantine or other measures restrictive of passenger and cargo traffic is on the whole illusory. I believe, therefore, we should make up our minds to deliberately renounce it, from the international point of view, and replace those measures by a sanitary organization in the interior of each country sufficiently perfect to insure the tracing of the first suspected cases, the earliest possible diagnosis of the first established cases and complete isolation, as well as thorough disinfection of the patient and everything that has been in contact with him."

Dr. Calmette also stated :—

"According to my idea—I speak for the countries of Europe—maritime quarantine can no longer be set up any more than terrestrial quarantine. If the defensive measures in the interior are properly taken, the uselessness of lazarets will become apparent."

And again the same authority :—

"In conclusion, I would state that, from the technical point of view, it would appear that new knowledge acquired since 1903, and which bears specially on the question of germ-carriers, far from encouraging us to strengthen the measures prescribed by the preceding Conference, is on the contrary of a nature to warrant our consent to a certain relaxation of those measures, for we note—facts abundantly prove it—that the existence of these germ-carriers renders illusory from the prophylactic point of view all measures restrictive of personal liberty."

Dr. Gaffky, a German delegate, present by special invitation, gave further precision to the practical result of the recognition of germ-carriers in the following words :—

"In my opinion it is necessary to be able to stop at the frontier every cholera-infected individual who presents himself."

M. Freyberg, the Russian delegate, fresh from a long and practical acquaintance with cholera in his own country, associated himself with the general pronouncement in favour of the amelioration of interior sanitary organization as being the real defence against pestilential disease. He said :—

"I believe the most important measures to be taken are : the creation of an effective sanitary medical service, the organization of bacteriological laboratories, and the general improvement of hygiene."

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\* Procès-verbaux des Séances de la Session extraordinaire de mars 1911 du Comité Permanent de l'Office International d'Hygiène de Paris.



M. Velghe, the Belgian delegate, who was subsequently distinguished at the plenary meeting of the Conference in the autumn by being appointed President of the “ Comité de Rédaction et de Codification,” said :—

“The conclusion arrived at in the report by M. Freyburg, Russian delegate, is that the best means of fighting cholera consists in having a strong sanitary organization ; this has already been said several times, but it is well, I think, to emphasize it : *a strong sanitary organization*, not one improvised at the moment cholera breaks out, but, as M. Freyburg has said, a preventive organization prepared long in advance, which shall have for its object the arming of each territory with the necessary elements : doctors, sanitary inspectors, and laboratories. In this way the population get used to the organizations, and the organizations also learn to know the region.

“I believe the best system of international defence against pestilential diseases consists in having a sanitary organization more and more perfect in each country. And, if such is equally your opinion, gentlemen, it appears to me that it would be useful if we call the attention of our respective Governments to this principle. I feel we could do this with all the more weight since that conclusion has been the result of all our debates. We have here assembled technical, scientific, and administrative authorities, and the agreement of all upon this important point is of a nature likely to make an impression on all Governments and decide them to develop their sanitary organization and bring it into line with the progress of science.”

M. Barrère, French delegate, expressed complete agreement with M. Velghe's views.

Finally, on the proposition of M. Velghe, the following conclusions were unanimously adopted by the International Bureau, at the meeting of the 16th March 1911 :—

“Epidemiological facts brought forward since the signature of this Convention (Paris, 1903) have once more brought to light the primary importance of the organization of hygienic services for the prophylaxis of plague and cholera ;

“They have also emphasized the usefulness of the popularization of hygienic precepts, as well as the necessity of providing drinking water for populations under the best possible conditions ;

“Considering that in spite of precautions taken at frontiers, all countries must, more than ever, having regard to the frequency and rapidity of communications, expect to see outbreaks of plague and cholera occur in their territory, and, in consequence, hold themselves ready to fight the affections at their first manifestations ;

“Considering, on the other hand, that these diseases, redoubtable where the sanitary conditions are defective, cannot succeed in implanting themselves and causing appreciable ravages in countries where the resolutions mentioned below are acted upon ;

“Considering that the amelioration of hygienic services offers also the advantage of allowing a further reduction of the obstacles at present opposed to international traffic exchanges ;

“That the rational amelioration and organization of these services, as well as drainage works, are not only indispensable measures in the campaign against pestilential maladies, but serve, in the first degree, the prophylaxis of the majority of transmissible diseases ;

“For all these reasons :—

“The Permanent Committee of the International Hygienic Bureau, assembled at a special meeting, as well as the delegates of Germany, Austria-Hungary, Denmark, and Luxemburg, also present, express the wish to see Governments :—

“(1) Devote themselves specially to perfect and centralize their hygienic services ;

“(2) Promote drainage works, especially those the object of which is to remove unhealthy conditions, and to procure potable water of good quality to the populations ;

“(3) Work, also, for the popularization of hygienic ideas.”



Reflection made of the foregoing, there are two outstanding features which deserve consideration.

In the first place, it is clear that the spirit which animated the proceedings of the special meeting of the Paris Bureau was one which attributed to the internal sanitary organization of a country the first and pre-eminent rôle in sanitary defence, and while acknowledging that quarantine measures of the antiquated type were of secondary importance, it held in its purview the modification of such measures in accordance with the most recent acquisition of science with regard to germ-carriers.

In the second place, it is also clear from the references quoted above that the general consensus of opinion was to the effect that while in the interests of commerce the restrictions of quarantine were matters which very properly come within the sphere of international compact, the internal sanitary organization was one in which every country would unhesitatingly exercise its own judgment and practice.

There is a further point which, striking as it is, merits some notice. In all previous Conferences the advocates of stringent measures of quarantine as against the interests of shipping and commerce have been the technical representatives—the representatives of medical science; while the diplomatic or administrative representatives have endeavoured as far as was in their power to attenuate all such restrictive measures. At the March meeting in Paris it is evident that the scientific representatives (of which the meeting almost entirely consisted) for the first time showed the tendency to change their ground and thereby to liberate commerce and shipping in the fullest degree while maintaining the principle long recognized in India and elsewhere that the human being, except in the case of bubonic plague, is the most important factor in the dissemination of epidemic disease, and, indeed, in the case of cholera—the importance of which far outweighs the other diseases with which the Commission was concerned—is practically the sole factor.

Before discussing the results of the Conference it is not without interest to consider the bearing of the Paris Convention of 1903 on sanitary administration, either on the frontiers or within the borders of Egypt. The Convention of 1903 differs little from its predecessors of 1897 and 1893. While ostensibly framed in some cases for the purpose of initiating a system of sanitary defence, these Conventions did not leave out of view the very practical point of reducing as far as possible restrictions to commerce. In the more advanced European countries the latter object was considered, very rightly, as being the one most worthy of attention, for these countries had recognized that sanitary security was best obtained by internal setting of the house in order rather than by fences of protection without. On the other hand, in certain other countries, less advanced in the science of hygiene, or where it was desired to maintain some special control, the commercial and practical value of the Convention was little considered, while great stress was laid on its aspect of sanitary defence.

This was the case in Egypt. For while there has been no serious interruption of trade, no dislocation of commerce, no grievance on the part of the mercantile community, the provisions of the Convention by no means succeeded in protecting Egypt from the cholera in 1895–1896 and in 1902, nor of the epidemic of human plague which entered the country in 1899 and has continued ever since, nor has it rendered it invulnerable to the attacks of cattle plague from the Mediterranean littoral.

The admirable precautions taken by the Quarantine Administration in 1910 in relation to the cholera prevalent in Southern Italy, and again at later periods, was stated to be in direct contradiction to the provisions of the Convention in question. Such was also the case when the same Administration organized an extensive system of bacteriological examination of passengers who might be considered as “sanitary suspects.” And yet it is not too much to say that these two measures, which are said to be in direct contravention to the provisions of the Convention, did more to protect Egypt than all the provisions of the Convention put together.



In Egypt, the question of sanitary defence is one of exceptional complication resulting from the fact that the recognized serious measures are vested in different authorities and within a certain sphere ruled by international counsels.

It has been laid down by the highest Public Health authority in England—the Local Government Board—that difficulties in administration must necessarily exist where the principal sanitary authority is divorced from the port sanitary authority. If this be the case in England, how much more exaggerated must be the difficulties in Egypt—hitherto the field of a multiplicity of conflicting interests. In this country more than any other, perhaps, a clear-cut system of administration is essential for efficiency and the avoidance of embarrassing complications and errors.

So far as the internal sanitary organization of the country goes, this is based on those principles which are accepted in the most civilized countries, *viz.*, a Central Administration, delegating its authority and receiving information from a sanitary organization in the Provinces, each of which in its turn repeating the processes to the districts, which may be called the third stage of the structure.

It is, however, in the terminal ramifications of the organization that its weakness exists, and must necessarily exist until a wider system of education of the people is undertaken and until more general provision of medical assistance obtains with the improvement of the district and village organization, which has already been begun, more especially in certain districts of the country. But this improvement requires generalizing, which can only be done by persistent effort directed by keen and efficient inspectors. In that part of sanitary defence connected with internal organization, this section is the weakest spot and requires most careful and persistent attention. Efficiency in this sphere can only be achieved in time and after much effort, but no Convention can effect it, neither can international counsels modify it in the slightest degree.

With this preamble, attention may be directed to the practical results of the Conference which may be thus briefly stated :—

A.—*As regards Plague :—*

(i) The ten-day period of “surveillance” or observation imposed on infected ships by Art. 21 of the 1903 Convention was reduced to five.

(ii) Recognizing the predominant part played by rats in the propagation of bubonic plague, deratization was made compulsory in “infected” and “suspected” ships, while the Conference limited itself to recommending :—

(a) Periodic deratization of ships, at least once every six months ;

(b) Preferential treatment in ports of arrival for such ships as had undergone this process ;

(c) That the measures prescribed in the 1903 Convention with regard to passengers and crews in ships infected or suspected of plague should be modified in the sense of limiting these measures to the individual infected and the “contacts” or suspected “contacts,” and leaving even these measures to the optional decision of the port sanitary authority.

B.—*As regards Cholera :—*

(i) The predominant question was the bacteriological examination of dejecta which certain delegates desired to see imposed as a general measure on all arrivals from an infected area. This proposal was subsequently abandoned in favour of imposing such examination :—

(a) In the case of “infected” or “suspected” ships for all “contacts” ;

(b) In the case of “healthy” ships arriving from an infected port after a passage of less than five days in an overcrowded and insanitary condition.

(ii) With regard to drinking water, water ballast, and bilge water, the Conference recognised that in view of the fact that no case of cholera has ever been known to be introduced by these means, it was not justified in imposing very strict regulations in these headings.

(iii) A definition of the word "foyer" brought forward by the German delegate (Professor Gaffky) was adopted. It is conceived in the following terms : " Il existe un foyer quand l'apparition de cas de choléra au delà de l'entourage du ou des premiers cas prouve qu'on n'est pas parvenu à limiter l'expansion de la maladie là où elle s'était manifestée à son début."

C.—*Administrative and General*:—

(i) Each Government would be in a position to give its own definition to the word "isolation" used in Art. 9 of the Convention of 1903.

(ii) A ship which only lands mails and passengers, including their luggage, or which only takes aboard such mails and passengers who have had no connection with the port or infected circumscription, is not to be treated as having called at an infected port. This is an extension of the principle recognized in Art. 32 of the old Convention. It is intended to apply to such ports as Marseilles and Brindisi, etc., where passengers and mails are embarked on a ship which has put in for no other purpose than to receive them.

(iii) It is left to the Governments of the countries to whom notification is made to decide as to whether a given circumscription is to be considered infected or not, and a new article defines the circumstances in which this may be done.

In termination, it merely remains to refer to the declaration made at the Conference in favour of the abolition of the International control of the Quarantine Administration in this country—a matter which has already been the subject of extensive discussion in the public press.

(i) PASSENGER AND IMMIGRANT CONTROL.

The foregoing deals with the general principles of sanitary defence ; it remains to give some short account of their practical application during the year under report. For the fourth year in succession Egypt was exposed to danger from cholera declared amongst the pilgrims in the Hedjaz or in other countries with which Egypt was in close and constant communication. The pilgrimage, of which there had been some hope that it would remain "clean," was declared "brut" (infected) on the 22nd December 1910, and therefore full precautions were taken by the Quarantine Administration.

The Passenger Control Regulations were approved by the Mixed Court of Appeal early in January, and promulgated on the 23rd of the same month, thus rendering the Ministerial Order of the previous August, which was valid only as regards Egyptians, applicable to all Europeans as well.

The pilgrimage occupied the full attention of the Quarantine authorities at Tor, which proved a very efficient "filter," and, though some cases of declared cholera occurred amongst the pilgrims, bacteriological examination was employed to detect and exclude "carriers," of whom the most refractory individual was handed over to this Department and isolated at Abbassia Infectious Hospital until such time as he ceased to be a "carrier"—a period covering at least a month.

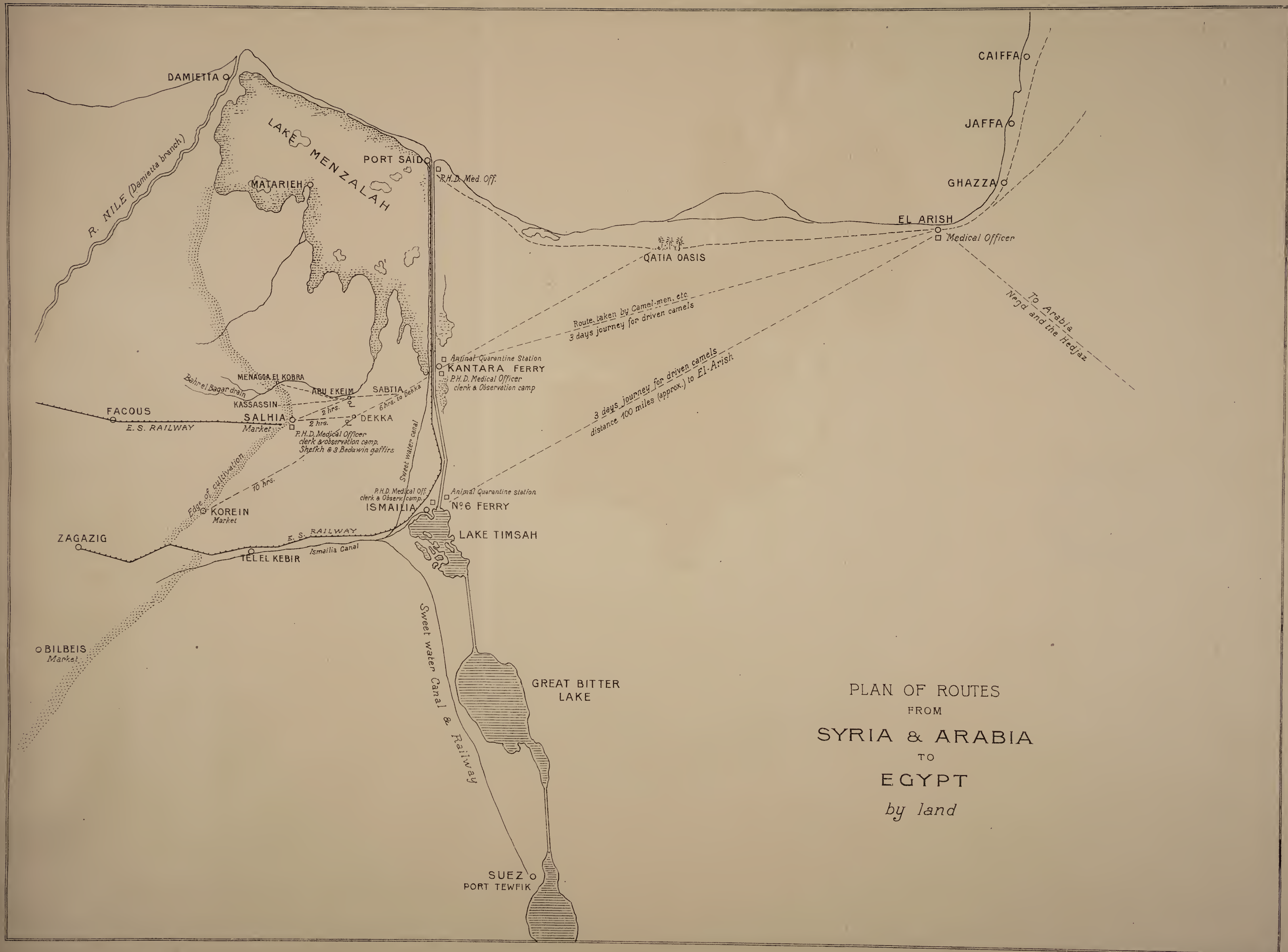
With the declaration of cholera in other countries the activities of the Quarantine Administration were further taxed, and a special organization and laboratories were established by Dr. Ruffer, C.M.G.,\* the President of the Board, for the bacteriological examina-

\* "Rapport sur l'existence du choléra parmi les troupes ottomanes transportées à Tor," par Dr. J. G. WILLMORE. Alexandrie, 1912.

"Rapport général sur le campement quarantenaire à Tor, 1911-1912," par Dr ZACHARIDES BEY. Alexandrie, 1912.

"Rapport sur l'examen des selles des voyageurs provenant des pays infectés de choléra," par Dr CHRENDIROPOULO. Alexandrie, 1912.









tion of "suspect" arrivals from infected localities. No less than 34,461 such examinations were carried out between the 17th August 1911 and the 31st January 1912, amongst which number "vibrios" were detected in 63 cases, of which 23 shewed a positive cholera reaction according to the classic tests. This measure, previously instituted by the American Marine and Hospital Service for the control of Italian immigrants arriving from their infected country, and also adopted in Holland and on the Russo-German\* frontier, was then undertaken for the first time in Egypt, and its value was fully demonstrated. In view of the above figures, where it is shown that 23 cholera carriers might otherwise have been allowed to enter the country, it must be admitted that it is impossible to over-estimate its utility when applied to such conditions as are really "suspect."

Additional measures of protection were taken by this Department in two special regions, *viz.* :—

(a) The Eastern Desert area and Sinai.

(b) The Western Desert in the direction of Siwa.

(a) On the return of the pilgrims, and the recognition of the possibility of certain of these choosing the land route and thereby endeavouring to escape the Tor Station, it was necessary to bring into action the land patrols in Sinai as described in previous reports, while on the occurrence of cholera in Syria (the two most dangerous places being Jaffa and Caiffa, one and a half to two days and three days respectively from the frontier station of El Arish), it was also necessary to establish special measures for adopting the principles of the Passenger Control Act to the numerous persons entering the country from that direction. The attached map will indicate the importance of guarding the land routes in this area in the event of cholera existing in Syria, while the following extracts from the report furnished by Captain Heron (who was in charge of this duty) will make clear the conditions to be dealt with :—

"On the Syrian side of El Arish the nearest important towns are Ghaza (twelve hours distant), Jaffa (one and a half to two days), Caiffa (three days); the last two places were infected with cholera in 1911–1912.

"The time occupied in travelling from Jaffa to Egypt would be : one and a half or two days from Jaffa to El Arish, three days from El Arish to Kantara or Ismailia, animals detained two days in quarantine equals six and a half or seven days from Jaffa, or eight from Caiffa; add one day (approx.) from Kantara to Salhia, Korein, or Bilbeis.

"If one man of a party died of cholera just before reaching El Arish, his relations or friends would probably be found "fit" by the Medical Officer at El Arish, but if any one of them had been infected and was in incubation period there would still be five days before they could pass the Suez Canal at either Kantara or Ismailia.

"If one of a party died between El Arish and Kantara or Ismailia, the minimum period that must be passed by the rest of the party before entering Egypt would be five days, namely, two days animal quarantine and three days detention in observation camp, owing to the fact that there was one missing of those whose names were entered on the El Arish certificate brought by them."

During a period of some seventeen weeks observation no less than 5,306 persons passed through Kantara and 592 over "No. 6" ferry at Ismailia, or nearly 50 per diem, a figure which certainly emphasizes the necessity of control in this region.

(b) As regards the Western Desert, the rumoured (subsequently confirmed) existence of cholera in Tripoli rendered it necessary to be prepared for some such measures as described above in the event of the disease attacking Siwa or the nomads inhabiting the lands along the north coast from Sidi Barrani to Marint. The Quarantine Administration had already established a post at Girba, fifteen miles to the west of Siwa, and another on

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\* It was this measure which Dr. GAFFKY referred to in his statement quoted on page 78



the sea coast at Bag-Bag, while the Coast Guard Administration was providing patrols between these two stations, a distance of some 130 miles.

With the outbreak of the Italo-Turkish war and the subsequent establishment of a contraband prevention organization, it was felt that additional security had been established, and though certain "suspect" cases alleged to be cholera were reported from Siwa, it was proved by Captain Stanley (who proceeded immediately to the Oasis for the purpose of investigation) that whatever the clinical character of the cases may have been they were from an epidemiological point of view certainly not cholera.

## (ii) PILGRIMS AND PILGRIMAGE.

Since the prolongation of the Hedjaz railway in 1909, an additional factor of complication has been added to the control of returning pilgrims. Previously, the route followed by the great majority of these was in both directions by the Red Sea, and in this way those returning were subjected to control at the Quarantine Station at Tor. In the pilgrimages of 1909-1910 and 1910-1911 there was a certain danger to Egypt arising from those who, having taken the railway, were enabled to travel as ordinary passengers and return *via* Suez, thus escaping the sanitary control so necessary for this class of person returning from cholera-infected districts. An arrangement was therefore made by which pilgrims were to be offered the choice of taking return tickets, inclusive of all sections of the journey :—

- (1) *Via* the Red Sea, going and returning ;
- (2) Going *via* Syria and the Hedjaz railway and returning *via* the Red Sea.

Negotiations were opened with the Khedivial Steamship Company, and with the Hedjaz railway through the Ottoman authorities, and arrangements were finally completed so that any pilgrim could purchase his book of coupon tickets for the journey in his own village. The routine was published in Circular No. 40, of the 1st August 1911. However, early in September, or half-way through the Mohammadan month of Ramadan, when the time for the departure of the pilgrims was approaching, cholera was notified as having broken out in Mecca, and also in Caiffa in Syria. Representations were therefore made to the Government, and with the approval of the Council of Ministers and the consent of H.H. the Khedive, measures were taken to limit the pilgrims to the smallest possible number, so as to avoid unnecessary risk of the importation of cholera by pilgrims on their return. The means taken for this purpose was the imposition of the payment of a high deposit, namely L.E. 50 for first class passengers, L.E. 40 for second class, and L.E. 25 for third class, and, in addition, a further deposit of L.E. 25 for each pilgrim of each class was required at the time of taking out his passport, which sum was, however, refunded to him on board the departing steamer to be used for the purpose of defraying his expenses in the Hedjaz.

The result of these restrictions was that the pilgrimage of 1911-1912 was a very small one in so far as was shown by the number of passports taken out, but there is little doubt that a considerable number, variously estimated from 1,000 to 2,000, most of them poor, travelled as ordinary passengers to Syria and then, taking the Hedjaz railway, trusted to patience and their good fortune to find their way back. This supposition would appear to be borne out by the statistics found in Tables XXXVI to XXXIX, from which it will be noted that 18 Egyptian pilgrims left Suez in the ordinary and regular way before the issue of the restrictive circular, but none thereafter. Meanwhile, the Mahmal escort, numbering 493, accompanied by 45 regular pilgrims, travelled *via* Syria and the Hedjaz railway, to return *via* the Red Sea. The total numbers of Egyptian pilgrims in the six previous years have been respectively 9,577, 5,915, 15,870, 17,971, 11,480, and 14,289, figures which strikingly emphasize the effective nature of the restrictive measures.



# MAP SHEWING DESERT ROUTES on the WESTERN FRONTIER OF EGYPT









TABLE XXXVIII.

RETURN OF PILGRIMS, 1912.

No.	Date of Arrival, 1912.	Name of Ship.	PILGRIMS.		Passengers.	Total.	Died in their Towns.	Cause of Death.	Died in Suez Hospital.	Cause of Death.	Kept in Tor Hospital.	Kept in Suez Hospital.	Number not traced.	Remarks.
			Egyptian	Foreign.										
1	January 1	Dakahlieh	608	—	18	626	—	—	—	—	40	—	—	Traced : all in good health.
2	" 7	Missir	497	—	142	639	—	—	—	—	15	4	—	" " "
3	" 12	Tantah	174	—	240	414	—	—	—	—	18	2	1	97 of the Egyptian pilgrims kept at Suez observation camp.
4	" 22	Negbilleh	4	11	—	15	—	—	—	—	15	2	—	2 in hospital and 13 in Suez observa- tion camp.
5	February 1	Kench	2	—	40	42	—	—	—	—	2	—	—	1 pilgrim kept at observation camp.
		TOTAL	1,285	11	440	1,736	—	—	—	—	90	8	1	



TABLE XXXIX.

DETAILS OF THE FOREIGN PILGRIMS RETURNING VIA THE CANAL, 1912.

No.	Date of Arrival.					Ship.					No. of Foreigners.
1	December	25	(1911)	...	...	Cambridge (English)	...	...	...	...	556
2	"	25	"	...	...	Voronej (Russian)	...	...	...	...	896
3	"	30	"	...	...	Vazorian Zikis (Rumanian)	...	...	...	...	502
4	"	30	"	...	...	Solina (Rumanian)	...	...	...	...	535
5	"	31	"	...	...	Nevornée (French)	...	...	...	...	1,330
6	"	31	"	...	...	Alexandra (Greek)	...	...	...	...	348
7	January	3	(1912)	...	...	Tamboff (Russian)	...	...	...	...	892
8	"	5	"	...	...	Kherson	...	...	...	...	1,817
9	"	6	"	...	...	Saify (English)	...	...	...	...	756
10	"	6	"	...	...	Minia (Khedivial Mail)	...	...	...	...	786
11	"	7	"	...	...	Tigre (Russian)	...	...	...	...	652
12	"	8	"	...	...	Abbassieh (Khedivial Mail)	...	...	...	...	1,226
13	"	9	"	...	...	Yaroslav (Russian)	...	...	...	...	53
TOTAL ... ..											10,349

#### D.—GENERAL SANITARY MEASURES.

##### (i) BIRKAS.

The birka question is one of long standing, and has frequently been referred to in these Reports. The fact that so little has as yet been done in effecting a solution is due both to the vastness of any undertaking which can satisfactorily and finally solve the question, as well as to financial and legal difficulties involved therein; it is certain, however, that a considerable step forward could be made if the Provincial Councils could be induced to take up the matter each in its own province.

If, however, any serious measure is to be undertaken for the gradual abolition of existing birkas, these difficulties must be surely faced and considered.

In the first place, the proprietary rights in a birka commonly involve complication. From this point of view, birkas may be considered as of three categories :—

Firstly, those which are the acknowledged property of the Government ;

Secondly, those constituted within the boundaries of lands of public utility, and commonly created by the administration which holds the lands in trust ; and

Thirdly, the property of private individuals.

Some years ago, the Department of Public Health made an effort to produce a scheme for the gradual filling of birkas, but although the complete scheme was not adopted by the Government, a sum of L.E. 5,000 was allotted as a special credit for operations connected with birka filling. This sum has since been reduced, and now stands at a few hundred pounds. Such provision is naturally entirely inadequate for any comprehensive measure, and it is therefore reserved for very special cases which require urgently to be dealt with. On the other hand, the Government Lands Department has within the last few years evolved a scheme for filling a certain number of Government birkas. This scheme, which naturally cannot apply to either the second or third categories before mentioned, is based on the idea of selling the Government birkas to private individuals on the condition that the purchaser fills it in within a period of two years. For this object, these birkas are put up to open adjudication. The details of the arrangement under which this work is carried on have been supplied by the Controller of the Government Lands Department, and are as follows :—

“ Applications to fill in birkas are treated in the following way :—

“ The position, area, and whether the birka has any value are ascertained.

“ If there are several applications to fill in a particular birka, it is put up to adjudication and knocked down to the highest bidder.

“ In the event of there being only one applicant it is handed over to him against price, or free if no price is obtainable.

“ The purchaser is required by law to fill in the birka within a period of two years. If this is satisfactorily done he is given a title deed for the property. It not infrequently happens that purchasers are unable to complete their contract, and at the end of two years a certain amount of filling still remains to be done; such cases are without exception dealt with leniently and extensions of from three to six months given in order that the birka may be filled up. It sometimes occurs that at the end of the first year it is found that little or no work has been undertaken towards filling in a birka; such cases are specially reported on by the local staff and forwarded to the Ministry with a recommendation from the Mudir as to the course to be followed. On an unfavourable report from the Mudir the contract is cancelled and the birka re-entered on the Government lists. If there is any doubt an Inspector of Finance examines the case.

“ During the year 1911, 79 birkas were handed over to be filled in, and title deeds given for 78 birkas the filling in of which was completed during the year. The total area of these filled-in birkas aggregated rather more than 35 feddans, of which 11 were in the province of Sharqia, 12 in Behera, one birka of five feddans in Menufia, the balance being in smaller areas in the provinces of Qaliubia, Daqahlia, Gharbia, Giza, Beni Suef, Fayum, Minia, and Girga.”

It is certain that much good work has been done on these lines, but it is a natural consequence of the conditions that only those birkas are readily taken over by private individuals for their own profit of which the future value is considerably greater than the cost of filling. The consequence is, therefore, that other birkas which are equally or more dangerous from the sanitary point of view will, on these conditions, remain unfilled, in consequence of the cost of filling being greater than the value of the reclaimed land. It is in these cases particularly where the Provincial Councils may step in, and by taking over from the Government Lands Department and filling in the birkas in question would carry out a most useful and necessary work. A circular on the subject has recently been issued to the local authorities, and efforts have been made to interest the Mudirs in the question. It is hoped, as a result, that some steps may shortly be taken on the lines indicated. It will be realized, however, that even if such steps make the most favourable progress, the scheme will touch but one category of birkas, namely, those which are recognized as Government property. The second and third categories mentioned above will remain entirely untouched.

The difficulty of obtaining the filling of birkas on land of public utility is entirely a financial one, for the Administration concerned, when approached on the subject, naturally replies that no credit exists in their budget for the purpose, a statement which is perfectly true. It is proposed, however, that in future Government Administrations shall be expected to comply with the birka law in the same way as private individuals, and for that purpose the making of borrow pits within the specified distances should be forbidden; and in the carrying out of works in which spoil is required, estimates should be based on the assumption that no spoil will be available which would cause the creation of a birka within such prescribed area. Further, it is proposed that the Administration concerned should be requested to demand a credit for gradually abolishing such borrow pits as now exist within the range specified by the birka law. Steps have already been taken to approach the Chairman of the Supreme Railway Board on this subject.

As regards the third category of birkas the matter is, as the law stands, even more difficult. It is often impossible to discover the actual owner of a birka, the owners dreading legal compulsion or the odium of being connected with something that is com-



plained of by the villagers. The consequence is that every inducement exists for them to remain entirely passive until possibly the Government or some other person or authority fills the birka, when it becomes available as agricultural or building land; claims are then freely made upon the property rights of the reclaimed land. Another complication occurs in the fact that a birka is frequently the property of more than one individual, and sometimes also of the Government combined.

It would seem that the shortest and simplest way of dealing with this position would be found in the enactment of a short law providing for:—

- (1) The scheduling from time to time and on defined lines of dangerous birkas;
- (2) Laying the onus on any claimant to the property to prove his claim within a given delay;
- (3) That if no claims are made, or if claims made are not proved, the birka will be considered Government property;
- (4) If the proprietary claims be made good, the owner will be held to complete the filling within a given period, in default of the accomplishment of which the birka should revert to the Government.

It will be realized that the suggested law provides in effect for the confiscation by Government of all birkas on private land which the owners fail to fill up at their own expense within a limited time. If the birkas are in their present state absolutely valueless to their owners, which in the vast majority of cases is the fact, it does not seem that any reasonable objection can be taken to such a measure. But exceptional cases may occur, and in this event perhaps the natural course would be to expropriate for purposes of public utility, in the ordinary way. In any case, however, it is believed that there should be no insuperable obstacle, from the legal point of view, in the way of giving the Government the powers proposed.

If this should be done, then under Arts. 3 and 4, when any birka was thus recognized as Government property, it should be available for filling, either:—

- (a) By the arrangement now made by the Government Lands Department;
- (b) By the Provincial Councils; or
- (c) By the Ministry of Public Works under a special arrangement which it is proposed should be made.

With reference to the latter suggestion, it is thought that with the construction of an extensive system of agricultural drains in the Delta, a large quantity of spoil will be available, and probably in those districts where the birkas are of the worst type and most urgently in need of filling. If a measure of birka-filling could thus be combined with the great scheme of drainage in the Delta, not only would much gain to health be assured, but considerable areas of land would be reclaimed for the purpose of agriculture or for building.

Steps have already been taken to schedule all Government birkas within the boundaries of mudiria or markaz towns, giving particulars of area, depth, etc., and if a law such as is outlined above should be seriously proceeded with, it would be at once desirable to arrange for the scheduling of non-Government birkas in the same areas.

## (ii) SANITATION OF MOSQUES.

The sanitation of mosques is of considerable importance, not only in the large towns, but in the villages, where the ablutionary accommodation is the only approach to the provision of public latrines, and as such plays a very important part in the sanitation or otherwise of the village.

The new law was promulgated on the 1st July, 1911, and provides for the submission of plans to this Department previous to the construction of a latrine accessible to the public. The same applies to latrines and fosses attached to mosques or “zawias,”

as well as ablutionary systems and water supply. The Department must approve all modifications of such installations. Ablutionary systems must be furnished with running water. Fosses must be ventilated, must not communicate with the Nile, canals, or birkas, nor be emptied on land except such as is designated for the purpose.

The effective control of these village mosques is exceedingly difficult. Efforts have been made from time to time to put their ablutionary systems on a satisfactory basis, and models of absorption fosses and others have been distributed in the various mudirias for the local builders to follow. Types of ventilating pipes have also been furnished, but in most cases the improvements carried out have very soon been allowed to fall into dilapidation for want of effective supervision and timely repair. When the fosse is filled or fails to percolate for want of attention, the common resource is to roughly break a hole in it, and drain it into the nearest water course, whether it be river, canal, or misqa, which is often the general water supply of the same or other villages. Endeavours have been made to make the omdas and sheikhs responsible for the maintenance of conditions as nearly sanitary as possible, but there are so many other calls on their time and responsibilities that little wonder can be felt if they are occasionally neglectful. A greater improvement may, however, be anticipated in the future with the extension of simple hygiene education in the villages, and in the raising of the standard and responsibilities of the present village barber, who should ultimately be made essentially responsible for the sanitation in his village.

The following is a statement of the work done in 1911 :—

Ablutionary systems of private mosques newly constructed and opened for use ... ..	11
Ablutionary systems of old mosques repaired and opened for use ... ..	11
Ablutionary systems of Waqfs mosques repaired and opened for use ... ..	15

(iii) CEMETERIES.

The following table represents the work done in connection with cemeteries during the year 1911 :—

TABLE XL.

M U D I R I A.	CEMETERIES.		Roads for Cemeteries.	OLD CEMETERIES.		
	Established.	Enlarged.		Authorized.	Partly Condemned.	Condemned.
Qaliubia ... ..	2	—	—	6	1	—
Sharqia ... ..	—	—	—	—	1	2
Menufia ... ..	—	—	—	1	—	—
Gharbia ... ..	4	2	—	1	1	1
Daqahlia... ..	2	1	—	2	2	5
Behera ... ..	1	—	—	1	—	1
Giza ... ..	—	—	—	1	1	6
Beni Suef ... ..	—	—	—	—	—	1
Fayum ... ..	—	—	1	—	1	3
Minia ... ..	2	1	—	—	—	—
Assiut ... ..	3	—	—	1	—	—
Girga ... ..	—	—	—	1	—	10
Qena ... ..	—	—	—	7	2	4
Aswan ... ..	—	—	—	—	—	2
TOTAL... ..	14	4	1	21	9	35



In addition, 52 cemeteries have been delimited in the provinces, of which the following table gives the details :—

TABLE XLI.

CEMETERIES DELIMITATED.

M U D I R I A.	No. of Cemeteries.	No. of Pillars.	At whose Expense.
Gharbia ... ..	4	43	Government.
	3	15	Inhabitants.
Daqahlia ... ..	2	43	Government.
	2	12	Inhabitants.
Behera ... ..	3	19	Government.
	2	8	Inhabitants.
Qaliubia ... ..	1	8	..
Giza ... ..	2	22	Government.
Fayum ... ..	18	193	..
Beni Suef ... ..	2	28	..
Minia ... ..	1	6	Inhabitants.
Assiut ... ..	3	73	Government.
Girga ... ..	2	18	..
Qena ... ..	7	93	..
	52	581	

The most pressing question at the present moment in connection with cemeteries is that concerning the cemeteries of Cairo, which for many years has given rise to a good deal of trouble concerning the proprietary claims of private individuals, most of which, if not all, are the result of unauthorized encroachments on cemetery land, which is land regarded as of “public utility.” A meeting was recently held of representatives of the following Departments :—

- The Ministry of Justice,
- The Department of Public Health,
- The Government Lands Department,
- The Survey Department,
- The Tanzim Department,

for the purpose of drafting proposals for the delimitation and future regulation of the Cairo cemeteries.

(iv) UNHEALTHY ESTABLISHMENTS.

The Committee which has recently been sitting on this matter, which is one of considerable importance, is about to issue its report to H. E. the Minister. The complications and other drawbacks of the old law were sufficiently apparent to demonstrate its unsuitability some years ago, and a new law, based on simpler conceptions, with the essential necessities for regulating unhealthy establishments, will be specially welcomed. But however simple the law, and however efficient its provisions, it will be impossible to carry it out in a satisfactory manner unless additional means of inspection are provided. The present condition commonly is that once the details of installation and exploitation are fixed, the terms fulfilled and the licence granted, the local authorities, as a rule, take little further interest. In one or two exceptional cases where efforts have been made to maintain a more or less rigid and careful inspection, the results have certainly proved the advisability of the institution of a small subordinate staff for this purpose, more especially in the large towns.

The following table, No. XLII, gives details of the applications made for licences during the past year :—

TABLE XLII.

Nature of Establishment.	Approved.	Refused.	Under Consideration.	Total.
Public bakery... ..	1	—	—	1
Gypsum factory ... ..	1	—	—	1
Mineral acid factory ... ..	1	—	—	1
Ammonia sulphate factory ... ..	1	—	—	1
Grinding of "homra" ... ..	1	—	—	1
Knacker's yard ... ..	—	—	1	1
Carding jute by mechanical motor ... ..	1	—	—	1
Soap factory ... ..	1	1	—	2
Sweetmeat factory... ..	2	—	—	2
Butter factory... ..	2	—	—	2
Asphalt factory ... ..	—	2	—	2
Hospitals ... ..	2	—	—	2
Oil presses ... ..	3	—	—	3
Public baths ... ..	1	—	4	5
Tanneries... ..	4	1	—	5
Sugar and honey factory ... ..	3	—	2	5
Manure store ... ..	5	2	—	7
Cotton ginning factory ... ..	6	1	2	9
Hulling rice factory ... ..	10	—	—	10
Aerated water factory ... ..	4	7	2	13
Public markets ... ..	30	3	7	40
				114



According to the provisions of the existing law on unhealthy establishments, if it is desired by the local authority to enforce, for sanitary reasons, structural alterations in an establishment already licensed, it is necessary to obtain a Ministerial Arrêté on the subject. The following are the questions which have been referred to this Department for opinion in connection with these Arrêtés :—

TABLE XLIII.

ESTABLISHMENT.	Mudiria or Governorate.	Approved.	Refused.	Under Consideration
Public bakery ... ..	Alexandria... ..	10	—	—
Grocery and bar ... ..	„ ... ..	9	1	—
Stables ... ..	„ ... ..	16	—	—
Poulterers ... ..	„ ... ..	10	—	—
Brewery ... ..	„ ... ..	1	—	—
Cattle zariba ... ..	„ ... ..	1	—	—
Dye-works ... ..	„ ... ..	1	—	—
Tripe market ... ..	„ ... ..	1	—	—
		49	1	—
Public bakery ... ..	Cairo ... ..	2	—	—
Roasting meat ... ..	„ ... ..	1	—	—
Brewery ... ..	„ ... ..	1*	—	—
Public bath ... ..	„ ... ..	1*	—	—
		5	—	—
Cotton ginning factory ... ..	Gharbia ... ..	1	—	—
Grocers ... ..	Assiut ... ..	1	—	—
Market ... ..	Sharqia ... ..	1	—	—
Stable ... ..	Qaliubia ... ..	1	—	—
Lime kiln ... ..	Behera ... ..	1†	—	—
Pounding bones ... ..	Faynum ... ..	1†	—	—
Public bakery ... ..	Snez ... ..	—	—	—
		6	—	—

\* Not necessary to issue a Ministerial Arrêté.

† Not necessary to issue a Ministerial Arrêté as the applicant carried out the necessary action.

(v) FAIRS AND MARKETS.

*Fairs.*—In connection with the assembling of large numbers of people and its relation to the health of the country, the chief interest is centred in the Mulids (semi-religious fairs) of Tanta and Desuq on account of the situation created, firstly by an unusual aggregation of even a healthy population, and secondly from the risk of the presence of carriers of infectious disease amongst the frequenters of the fair. At these fairs extensive sanitary precautions are taken and have been with experience developed on very sound lines, so that the masses of people are kept well away from the town itself, the site of the fair is laid out in the form of an organized camp, water supply is provided, and a corps of conservancy men attend to the sanitary service of the area. The improvements effected in the conditions of these fairs during the last few years by simple though perhaps rather wearisome organization is very remarkable. Order and cleanliness and good management have been introduced where before their existence was very conspicuously absent.

An idea of the extent to which such arrangements are required may be gathered from the following figures taken from the reports of Mr. Hastings, Divisional Inspector, and Dr. Rouchdy Bey, Mudiria Inspector, who are respectively in charge of the Division and the mudiria where these two fairs are held. There are two fairs annually at each place In April (or early in May) and in July or August. The former is called the “small” mulid, and the latter the “great” mulid.

TABLE XLIV.

T A N T A.	Small Mulid (April).	Great Mulid. (July).
Persons arriving by Egyptian State Railway... ..	85,759	132,146
Persons arriving by Delta Light Railway ... ..	10,313	15,313
Persons arriving by other means (estimated)... ..	24,000	50,000
	120,072	197,439
Number of tents ... ..	680	6,380
General shops ... ..	370	840
Pedlars ... ..	450	750
Others ... ..	134	76
D E S U Q.	Small Mulid (April).	Great Mulid. (August).
Persons arriving by Egyptian State Railway... ..	30,500	53,896
Persons arriving by other means (estimated)... ..	25,000	50,000
	55,500	103,896
Number of tents ... ..	125	870
General shops ... ..	177	810
Pedlars ... ..	416	815
Others ... ..	126	81



*Markets.*—As regards markets, which are very general throughout the whole country, the chief interest, at any rate at the present time, is in their connection with cattle disease, in which connection they are referred to in a later portion of this report (*see* Cattle Plague, p. 135). These markets, whether cattle or general, are of very great importance in the ordinary life of the people : consequently, no attempt is made to close the “general” markets or divert their business except in serious epidemics such as cholera, or in individual outbreaks of, say, pneumonic plague. Cattle markets are, however, freely closed during the existence of cattle plague in the districts.

By law No. 22 (Art. 6) modifying the Organic Law, the authority for the establishment, removal, or closing of these markets is subordinated to the opinion of the Provincial Council.

The following is a list showing the numbers applied for in 1911 :—

TABLE XLV.

APPLICATIONS FOR PERMISSION TO OPEN MARKETS.

MUDIRIA.	Authorized.	Refused.	Under Consideration.	Total.
Gharbia ... ..	4	2	—	6
Daqahlia... ..	6	—	—	6
Sharqia ... ..	2	—	—	2
Menufia ... ..	1	—	—	1
Behera ... ..	1	—	—	1
Qaliubia ... ..	—	1	—	1
Assiut ... ..	3	1	—	4
Minia ... ..	9	2	—	11
Beni Suef ... ..	3	1	—	4
Giza... ..	2	—	—	2
Girga ... ..	—	—	2	2
Qena ... ..	—	1	—	1
	31	8	2	41

(vi) LEGAL PROCESSES.

The following table (No. XLVI) gives details of the various legal processes instituted by the Department during the year:—

TABLE XLVI.

MUDIRIA OR GOVERNORATE.		SANITARY CONTRAVENTIONS DRAWN UP BY SANITARY OR VETERINARY INSPECTORS.														RESULT.						
		Against Deaths Decree.	Against Vaccination Decree.	For Illegal Practice of Medicine.	Against Pharmacies and Sale of Poisons Decree.	Against Cemeteries Decree.	Against Etabl. Insal. Decree.	Against Vildange Regulations.	Against Excavation Regulations.	Against Enclosing Waste Land Regulations.	Against Decisions of Sanitary Commissions.	Re Protection of Water Supply.	Re Epidemic and Infectious Diseases.	Others to the Arrêté of 11th May 1893.	Against Cholera and Plague Decree.	Against Epi-zootic Diseases.	General, dealt with according to Mixed and Penal Codes.	Total Number reported.	Convictions obtained.	Acquittals.	Filed.	Under Consideration.
Cairo ...	...	56	367	24	50	—	591	5	—	46	—	5	—	—	—	296	1,440	786	37	150	467	
Port Said...	...	1	10	—	1	—	5	134	—	—	10	3	—	27	—	—	191	145	10	8	28	
Suez ...	...	1	2	1	—	—	15	10	—	—	—	—	—	—	—	—	29	25	1	3	—	
Ismailia ...	...	...	15	1	—	—	—	—	—	—	—	—	—	2	—	—	18	10	—	3	5	
Damietta ...	...	7	1	1	—	—	—	—	—	—	31	—	—	93	—	—	133	112	5	12	4	
Qaliubia ...	...	45	63	12	2	—	125	2	—	—	52	21	—	—	—	36	358	326	11	18	3	
Menufia ...	...	38	123	12	3	—	74	1	13	—	2	219	2	23	—	85	595	463	23	26	83	
Gharbia ...	...	65	239	10	7	—	153	30	20	9	76	67	—	1	—	103	780	622	19	83	56	
Daqahlia ...	...	18	246	8	4	—	167	4	2	—	64	205	—	81	—	41	840	741	22	36	41	
Sharqia ...	...	85	205	6	5	1	64	—	1	—	70	6	6	—	—	48	497	406	13	69	9	
Behera ...	...	103	284	5	5	—	67	2	24	2	—	200	—	109	—	52	853	610	24	151	68	
Giza ...	...	16	33	—	—	—	8	—	—	—	1	—	—	21	—	2	82	67	2	5	8	
Beni Suef...	...	34	63	—	4	—	2	1	2	—	30	16	—	—	—	16	168	149	2	1	16	
Fayum ...	...	59	75	6	1	—	41	—	7	2	19	17	—	17	—	47	291	268	4	8	11	
Minia...	...	76	188	3	1	—	133	4	17	10	662	23	8	13	—	111	1,249	1,171	17	10	51	
Assiut ...	...	143	303	11	12	9	136	3	7	—	67	8	2	58	—	31	790	685	38	21	46	
Girga...	...	68	154	3	1	6	118	—	18	—	74	—	—	32	2	8	485	398	13	16	58	
Qena ...	...	122	168	4	1	3	55	—	—	—	14	46	—	31	—	64	508	450	33	5	20	
Aswan ...	...	27	33	—	—	—	9	—	—	—	—	—	—	1	—	—	70	41	...	25	4	
TOTAL	...	964	2,572	107	97	19	1,763	196	111	69	1,172	7	836	13	509	2	940	9,377	7,475	274	650	978



E.—MUNICIPALITIES AND LOCAL COMMISSIONS.

During 1911, a Mixed Municipality was established at Port Said, the population of which is now estimated at 53,442 and where previously there had been no representative local government. Mehalla el Kubra and Mit Ghamr, where Local Commissions have existed for some years, were also endowed with Mixed Municipalities. Helwan, Kafr el Zayat, Minia, and Zifta, have also been granted powers to set up Mixed Municipalities, but their budgets were not prepared before the end of the year.

Local Commissions were established at Belqas and Baliana.

The two following tables present a partial analysis of the budgets of the various local bodies, showing in each case the total resources and the credits allotted for various branches of local administration :—

TABLE XLVII (a).

MUNICIPALITIES.

Municipality.	Water.	Vidange.	Roads and Road Maintenance.	Sanitary Works.	Total Expenditure.
	L.E.	L.E.	L.E.	L.E.	L.E.
Mansura ... ..	9,275	780	4,520	600	25,688
Zagazig ... ..	2,210	—	1,469	449	17,521
Tanta ... ..	1,200	—	7,389	534	20,656
Damanhur ... ..	4,891	—	3,717	232	16,232
Beni Suef ... ..	496	—	2,110	653	7,479
Medinet el Fayum ... ..	261	—	2,880	213	7,490
Mehalla el Kubra ... ..	68	—	2,275	106	6,404
Mit Ghamr ... ..	147	—	1,587	149	4,415
Port Said ... ..	300	—	6,403	1,302	23,639

TABLE XLVII (b).

LOCAL COMMISSIONS (*Budget of Ordinary Expenditure*).

Local Commission.	Water.	Light.	Roads.	Sanitary Works.	Lands taken for Tanzim.	Petty Expenses.	TOTAL.
	L.E.	L.E.	L.E.	L.E.	L.E.	L.E.	L.E.
Abu Tig ... ..	96	325	592	119	92	26	1,372
Akhmim ... ..	100	365	895	128	—	10	1,661
Assiut ... ..	550	850	2,076	208	738	50	5,124
Aswan ... ..	738	514	1,906	96	483	78	4,214
Baliana ... ..	—	—	—	—	—	—	—
Biba ... ..	—	280	747	147	—	16	1,335
Belqas ... ..	—	—	—	—	—	—	—
Benha ... ..	867	610	1,606	123	412	30	3,788
Belbeis ... ..	39	310	642	112	82	20	1,301
Shebin el Kom ... ..	69	500	1,195	191	577	15	2,800
Damietta ... ..	3,404	560	3,457	268	935	50	10,269
Desuq ... ..	30	409	1,077	43	100	30	1,930
Esna ... ..	72	300	774	95	299	17	1,650
Girga ... ..	117	624	1,107	139	366	23	2,556
Giza ... ..	120	700	1,370	135	442	29	3,006
Kafr el Zayat ... ..	113	992	878	100	570	29	2,827
Qena ... ..	343	600	1,190	160	442	61	2,906
Luxor ... ..	208	396	1,328	123	382	36	2,730
Manfalut ... ..	100	300	877	125	—	15	1,636
Mataria ... ..	12	222	1,534	5	574	38	2,754
Mallawi ... ..	131	290	1,066	141	—	15	1,779
Menuf ... ..	568	250	889	160	516	25	2,760
Minia ... ..	300	720	2,055	167	454	20	2,906
Minia el Qamh ... ..	34	280	688	50	—	19	1,236
Rosetta ... ..	—	400	992	113	335	30	2,053
Samanud ... ..	91	264	819	102	455	23	1,996
Sennuris ... ..	72	300	773	108	—	22	1,346
Simbellawein ... ..	29	289	808	57	—	20	1,399
Sohag ... ..	190	680	1,125	137	318	10	2,579
Suez ... ..	500	1,000	3,194	219	364	48	5,941
Tahta ... ..	105	450	898	117	250	26	2,008
Tala ... ..	91	220	759	145	10	22	1,434
Zifta ... ..	76	1,130	727	62	245	47	2,593

The institution of and work carried out by the local municipal authorities is of considerable interest to the Department of Public Health. Of all problems dealt with by these bodies, none are of greater importance than water supply, drainage, and conservancy (or disposal of refuse), to which may be added, however, the maintenance of open spaces and urban ventilation. It is, therefore, both natural and necessary that the State health authority should be closely connected with general municipal administration and, inasmuch as the methods pursued will naturally react on the State as a whole, it must be induced with adequate control in regard to the sanitary legislation and administration which the local bodies propose and actually put into execution.

It is true that in the most advanced countries in Europe considerable decentralization of public health administration has taken place in the past and much work of this nature has been handed over to local authorities. This step appears to have been taken under the impression that local authorities were best qualified to deal with the subject which in its immediate interests were supposed to be chiefly of local importance. Experience, however, has shown that matters of public health are by no means restricted in their ultimate influence to the circumscription of origin, but extend and make themselves felt in spheres far beyond that which was supposed to be their original limitation. The consequence is, as may be seen from the recent official reports of the Local Government Board of England, that the central authorities are now as far as possible withdrawing the free sanction that had previously been given to local authorities in the matter of health administration, and are insisting on a very much closer and serious control.

There is no doubt that considerable steps have been made by some of the municipalities of this country in initiative and energy, while local improvements continually meet the eye in most towns of Egypt. The important point now is that this initiative and energy shall be directed into channels presenting sufficient guarantees of utility, soundness of conception, and efficiency of execution. In no department of municipal enterprise is this more necessary than in that of public health. As is very natural, mistakes have been made which have rendered a lesson in experience to the bodies concerned, though perhaps at a somewhat excessive cost; a cost which might have been avoided with a little more discretion. It cannot, however, be too much insisted upon, that the spirit in which any control should be exercised is that of sympathetic help and encouragement rather than of captious criticism, and in so far as this Department is concerned, it is certainly in the former spirit that any problems submitted to it would be dealt with.

It has been thought advisable to here indicate the general views of the Department on the three most important elements of municipal sanitation, *viz.*, water supply, drainage, and conservancy. These views are contained in the following pages.

A.—*Water Supplies.*—As regards public water supply it may be said that the Department has finally and conclusively arrived at the opinion that a system of mechanical filtration is without any possible doubt infinitely superior in this country to that of the old-fashioned open slow sand filters, which, so far as any future installations are concerned will be definitely abandoned. Without going into the many detailed differences and the arguments for and against the two systems, it will be sufficient to direct attention to two main factors concerned in the comparison.

Firstly, the facility of washing the filter. Experience has abundantly shewn that where epidemic disease has been traced to the public water supply, the cause of the evil is invariably in the filter bed itself, and not in the crude water which is supplied to the filters, the reason being that the filter, while stopping the individual or diffused pathogenic microbes, at the same time affords, by the nature of its action, the facility to form growing colonies extending in such a way as to subsequently infect the filter bed. It is by the washing through of these colonies to the lower strata that the public water supply is



subsequently infected. In the open sand filter, the cleansing of the bed is a long, laborious and expensive proceeding, and is only carried out at lengthy intervals, sometimes separated by months at a time. In these circumstances it is easily seen that facilities are afforded for the settling in the bed of the filter of colonies of pathogenic as well as other bacteria.

In the mechanical system, on the other hand, the filter is washed once at least in every twenty-four hours. It is a simple, regular, and inexpensive process resulting, by means of a reverse wash, in the expulsion of the vast majority of the bacteria deposited therein, thus affording no opportunity for the settlement and growth of the pathogenic colonies.

The second reason for preferring the mechanical filter is the essential fact that it is necessary that the filter beds should be covered in from the sun in order to prevent the growth of algæ and allied organisms. At the season of low Nile a certain quantity of algæ are always present. In the open filter beds and in the somewhat stagnant water of a slow sand filtration system, they propagate at enormous speed, covering the whole bed in a few days, not only rendering it more and more impervious, but at the same time constituting a serious danger in their inevitable periodical detachment, which thereby breaks up the filter skin. In the case of a mechanical filter the filter surface of each is of only one-fortieth of the area of an open slow sand filter system delivering a corresponding quantity of water. This filter can readily be covered in at little expense, and this in itself, without even the factor of daily washing, is sufficient to prevent the growth of algæ in the filter beds. A marked example illustrating the truth of this statement was recently experienced in the trials of the new Cairo filter installation. The Nile being greatly infected with algæ, the water entering the filters was naturally infected also. The roof of the filter houses not having been completed, an opportunity was given to the algæ to collect, if not to propagate, in the filter beds, with the result that the percolation was largely retarded and the washing interval reduced from once in 24 hours first of all to once in 10 or 12 hours, and finally to once in about 4 hours. A very short interval after the completion of the roof, the algæ disappeared entirely from the filter beds, the percolation became normal, and the washing interval lengthened towards its normal period.

For these two reasons alone, as cited above, it is felt that open slow sand filtration should be definitely abandoned from any future proposal for a public water supply in this country.

With regard to the nature of the filter which is suitable, the only one which has at present been used for a public water supply in Egypt is the Jewell. But it was felt necessary to have alternative systems available. Several systems have been under experiment, and the Mather and Platt gravity filter, fitted with a rake system of cleaning has now passed the test and will be admitted to adjudication.

B.—*Drainage*.—The drainage of Cairo is progressing and will be referred to in its proper place. (See page 106.)

Meanwhile, the drainage scheme of Port Said has been confided to the Municipality recently created there. Negotiations have been in progress for the provision of the financial resources, and these have now (June) been provided by means of an advance from the Suez Canal Company.

A minor drainage scheme, dealing nominally with "surface water," has also been carried out at Damanhur, but the results up to the present leave something to be desired.

At Tanta it is proposed to drain, also nominally, the surface water from the northern portion of the town, comprising an area of about 20 feddans.\* In the case of both these towns the difficulty, always a great one in the case of a flat country, has been that of the disposal of the sewage. At Damanhur it is discharged without preliminary treatment into

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\* A feddan is equal to one English acre.



birkas which are indirectly connected with agricultural drains. It cannot be considered that this is an ideal system of disposal, but it was essential to get rid of superfluous rain water which falls in considerable quantity during the winter months in the region of Damanhur.

In the case of Tanta the disposal is by means of carrying down deep wells into the underlying sand and gravel strata after the sewage has undergone a preliminary purification. The precise details of this method are now under consideration, and it is felt that some difficulty will be felt in arriving at a satisfactory solution.

As other towns will no doubt be shortly interesting themselves in the problem of drainage, it is necessary to remark that the so-called surface water in this country is by no means similar to the surface water discharged in Europe, or indeed in any country where there is a more or less steady rainfall throughout the year. Indeed, the effluent which falls into the surface drains consists of street washings, discharges from stables, domestic slop water thrown into catch pits by hand, and altogether constitutes as foul a dry weather effluent as any that could be found, so that in devising a scheme for carrying off nominal surface water it is necessary to make provision for the disposal of a normal limited amount of crude sewage liable on rare occasions, varying with the local conditions, to a sudden augmentation by tropical rainfall.

Under these conditions it is probable that a system based on the following principles should be the type adopted for the municipalities of Egypt, such principles being:—

- (1) The collection of domestic sewage and surface water in one system of sewers ;
- (2) The normal dry weather effluent to be subjected to preliminary treatment by septic tank and filter elements before being passed on to the specially allotted portion of the land for the purpose of irrigation ;
- (3) That provision should be made by a system of weirs for the disposal of excess storm water into agricultural drains once the sewers have been scoured by the storm water ;
- (4) That when a system of drainage for surface water only is being prepared it must be understood that the effluent will be of quite as foul a description as ordinary house sewage and therefore will require as great precautions in its disposal as in the case of house sewage.

With these conditions it is felt that municipal drainage schemes might be profitably applied to most of the large towns of Egypt which at the present moment suffer greatly from the conditions which attend the cesspit system, namely, the soddening of the ground, and the inevitable propagation of mosquitoes and other insect pests, while affording a flourishing breeding ground for innumerable pathogenic bacteria. Inasmuch as rain is most frequent in the northern part of the Delta, which has now become the region where agricultural drainage is being carried out with renewed energy, the new agricultural drains and their branches would probably lend themselves to facilitating the disposal of superfluous storm water.

C.—*Conservancy*.—The disposal of refuse is a matter of extreme importance from many points of view. The usual method is that of a “depotoir” system placed at varying distances from the town. Here, all manner of offal, street rubbish, discharges from cesspits, etc., are frequently massed together under conditions which can in no way be considered sanitary, and which without very careful supervision become a perplexing nuisance to the neighbourhood.

Recourse has been had in some cases to the construction of destructors, but experience has shown this method to be expensive, wasteful (inasmuch as in no cases has it been possible to use it as a power producer), and further, its employment means the final destruction of all the nitrogenous matter which might be used in the production of a fertiliser.

In Lower Egypt especially there are many low-lying sites and birkas which could be profitably filled by the tipping of rubbish on to the land or into the birka. It is true that



this system is not without its drawbacks, but these drawbacks can be overcome, and where a proper method has been pursued the system has been most successful: as, for example, in Manilla, where it is officially adopted by the local Public Health Department.

The drainage of a slaughter-house, for instance, and even the contents of domestic cesspits, can be profitably manufactured into useful manure if a proper "basin" system\* is employed, whilst a simple destructor (of the Departmental type†) may be provided and reserved for burning refuse in connection with any epidemic or infectious disease.

The following is an analysis of the more important towns possessing Municipalities or Local Commissions regarding water supply, nature of drainage, and system of conservancy:—

DAMANHUR (Behera Province). Population 41,920. Mixed Municipality.

(a) *Water Supply*.—A Jewell filter plant was completed in August 1909, and gives a satisfactory supply.

(b) *Drainage*.—A surface drainage system in connection with the paving of the roads of this town (which suffers much from wet weather in the winter) has been designed, and partially carried out. The outfall is in a somewhat foul agricultural drain to the north of the town, and is not entirely satisfactory. The fosse system exists for domestic use.

(c) *Conservancy*.—Dry refuse used for baths and for dumping.

TANTA (Gharbia Province). Population 56,007. Mixed Municipality.

(a) *Water Supply*.—From deep tube wells, bacteriologically pure, but contains iron and manganese, and is considerably harder than Nile water. It is unpopular, and the inhabitants have petitioned and are agitating for a Nile water system with filters.

(b) *Drainage*.—A surface water drainage for a limited area of the town has been designed and is about to be carried out.

(c) *Conservancy*.—Dry rubbish is used for baths and dumping. Two simple destructors of the lime-kiln pattern exist for use in case of emergency.

SHEBIN EL KOM (Menufia Province). Population 23,533. Local Commission.

(a) *Water Supply*.—This town is favourably placed on the Bahr Shebin, one of the largest canals in Lower Egypt.

(b) *Drainage*.—No special system.

(c) *Conservancy*.—The "depotoir" system is in use.

MANSURA (Daqahlia Province). Population 42,615, including 1,638 Europeans. Mixed Municipality, which is the next oldest after Alexandria.

(a) *Water Supply*.—A Jewell filter plant deriving its raw water from the Sharqawia Canal. It is satisfactory.

(b) *Drainage*.—No drainage system exists, but a serious movement in favour of establishing a scheme both for surface water and domestic drainage is on foot.

(c) *Conservancy*.—As usual. There is a destructor (seldom used, however) which is available in case of necessity.

ZAGAZIG (Sharqia Province). Population 36,876. Mixed Municipality.

(a) *Water Supply*.—By deep tube wells which have the same faults as those of Tanta. The inhabitants have been agitating for a Nile filter system, which is about to be adopted.

(b) *Drainage*.—No drainage system exists.

(c) *Conservancy*.—The usual, with a simple lime-kiln pattern destructor.

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\* Such "basin" systems now exist at Benha, Shebin el Kom, and Beni Suef.

† Destructors of this type have been built at Tanta, Mansura, Zagazig, and Aswan, and have also been adopted by the Quarantine Administration at Tor Station.

BENHA (Qaliubia Province). Population 17,318. Local Commission.

(a) *Water Supply*.—A Jewell filter installation was completed in 1911.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

GIZA (Giza Province). Population 17,358. Local Commission.

(a) *Water Supply*.—The town is situated on the Nile, opposite Cairo, and the poorer inhabitants draw direct from the river. A service of filtered water supplied by the Government's slow sand filter installation is laid on to the town and to the better class houses.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

FAYUM (Fayum Province). Population 38,773. Mixed Municipality.

(a) *Water Supply*.—No public supply exists, with the exception of a number of pumps placed on the banks of the Bahr Yusef which traverses the centre of the town. A filter installation is urgently required for this town, which is perhaps the most of any in need of one: the preliminary steps for a large installation sufficient for the chief town, as well as the distant (10 kilometres) town of Sennures have now been taken.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

BENI SUEF (Beni Suef Province). Population 26,639. Mixed Municipality.

(a) *Water Supply*.—A Jewell filter installation with an intake from the Nile is just approaching completion.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual, with a "depotoir" system.

MINIA (Minia Province). Population 28,587. Local Commission.

(a) *Water Supply*.—No general public supply exists, but the town is favourably situated on the Nile, whence the inhabitants derive their supply by hand carriage.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

ASSIUT (Assiut Province). Population 41,244. Local Commission.

(a) *Water Supply*.—The Cairo Water Company possess an installation here which, originally of the open sand filter type, has been augmented by the putting down of two deep borings and using the water derived from this source in preference.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

SOHAG (Girga Province). Population 18,726. Local Commission.

(a) *Water Supply*.—No public supply, but the inhabitants draw by hand from the river

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

QENA (Qena Province). Population 20,768. Local Commission.

(a) *Water Supply*.—The town lies some distance from the river (about a mile) from whence is drawn the public supply of unfiltered water which is eagerly sought by the people.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

LUXOR (Qena Province). Population 7,018. Local Commission.

(a) *Water Supply*.—A deep well supply was installed some years ago, but it is now only used for road watering purposes, as the inhabitants will not utilize it for domestic consumption. This town is specially in need of a better water supply. As is well known



it is one of the chief tourist resorts of Upper Egypt, and though the hotels make their own arrangements for filtration in the interests of their *clientèle*, it is desirable that the native population also should be furnished with an adequate supply of pure and acceptable water.

(b) *Drainage*.—None.

(c) *Conservancy*.—Usual.

ASWAN (Aswan Province). Population 12,831. Local Commission.

(a) *Water Supply*.—The same remarks apply as above (Luxor) with the exception of the reference to wells.

(b) *Drainage*.—None, except at the hotels, where special arrangements are made.

(c) *Conservancy*.—Usual, but it is very well carried out and the simple destructor provided works in an admirable manner.

## F.—GOVERNORATES.

### (i) CAIRO.

It will be remembered that a Committee was appointed some years ago to report on the advisability or otherwise of creating a municipality or municipal service for Cairo. Pending the consideration of the report presented by the Committee and the possibility that steps would be taken for changing the system under which Cairo was governed, many requirements that were urgently necessary from the point of view of public health were postponed. The time, however, has now come when serious consideration should be given to the sanitary necessities of the city. Dr. Ferguson Lees, Medical Officer of Health of Cairo, has accordingly drawn up a report on the subject, making suggestions for the improvement of the present personnel and organization, as well as for the introduction of sanitary regulations which not only would be of benefit to the city, but are absolutely essential if it is to maintain a standard of sanitation and amenity which, as the capital of the country, it is entitled to hold. Dr. Ferguson Lees says :—

“Improvement on the present condition of affairs is specially desirable in two directions, that is to say: (1) of an increase of staff, and (2) of the provision of special regulations.

“*Existing Organization*.—Exclusive of the Assistant Medical Officer of Health, the only sanitary staff at my disposal for public health work at present consists of the various Qism Medical Officers. Of these there are 15, one to each district. Under existing arrangements all the public health work now attempted is carried out by these Medical Officers under the control of the Inspectorate.

“In considering the question of the alterations which I propose to suggest, I would ask that it be borne in mind that the duties of the Qism Medical Officers are not confined to purely public health work. In addition to this there falls to be performed by them important duties in connection with police work, certification of lunatics, vaccinations, registration of births and deaths, issuing of burial permits, attending on exhumations, superintending the formalities of funeral transport, examination of the bodies of persons whose deaths have been uncertified, preliminary reporting on applications for rukhsas, dispensary duties, investigation of complaints and other routine functions appertaining to their offices.

“In addition to performing, as already indicated, certain routine work only indirectly connected with public health, the Qism Medical Officer is the public health representative of the district which he serves, and in this capacity important duties in connection with the investigatory and executive side of public health work fall to

be performed by these Medical Officers. Moreover, the scope of their work in this direction will be increased by the addition of the initial inquiry duties in cases of infectious disease, as proposed in my report on infectious disease."

It is clear from the foregoing that the Qism Medical Officer is considerably overburdened with work, and it is necessary therefore to find some means of relieving him of certain special duties which can be more effectively performed by Medical Officers specially appointed for the purpose. One of these duties should certainly be that for the investigation duties in the cases of infectious disease.

Dr. Lees also makes proposals for the appointment of at least two European Medical Officers, the reasons for which step he presents with considerable logic, in addition to two infectious disease inquiry officers. His proposals also include a laboratory staff of bacteriologist and chemist, which are necessary for the systematic inspection and control of foodstuffs and drinks.

One of the most important suggestions that Dr. Lees makes, however, is connected with the establishment of a body of health overseers which he puts forward in the following words :—

"An essential of any efficient public health machinery is the provision of what is known in England as 'sanitary inspectors.' As this term, however, has a different signification in Egypt, I would suggest the use of the term 'health overseer' or 'mu'awin saha' to distinguish such men.

"The appointment of such officials is absolutely indispensable for the carrying out of any efficient public health work. Their duties would consist in the systematic inspection of establishments relating to public health licensed under the Decree of August 28, 1904, in order to insure the observance of the conditions laid down; in the frequent examination of establishments dealing with food and drinks; in the taking of samples for chemical and bacteriological examination of suspected articles intended for human consumption; in the seizure and submission to medical inspection of all improper foodstuffs; in the observation and reporting upon the general state of cleanliness of their districts; in the inspection and taking of samples from suspected wells; in the reporting of the existence of any conditions in their districts prejudicial to public health, and, in short, to act generally as the 'eyes' of the Inspectorate. Without such eyes any public health machinery provided must be of only limited utility, and until arrangements are made for the provision of such, the work of the Inspectorate must be practically confined to tinkering with casual complaints received from the outside public.

"The men employed in these duties in England are persons trained for this work. If similarly trained men were to be employed here, they would have to be obtained from abroad. The employment of such, however, would be impracticable as, in addition to the difference in laws, their ignorance of the customs and language of the country would make their service of little use for a long time. Moreover, the employment of such trained men would be costly, and I would suggest the engagement of suitable men locally as they are met with and the training of them ourselves. The men required are of the type of the European disinfectors now employed by the Department.

"For Cairo, 15 such overseers are necessary, one for each qism. They would require to be picked men of a good class and would have to devote their whole time to the Service."

As regards special laws and regulations, the following is an extract of Dr. Lees's report :—

"At present Cairo is regulated by the same health laws as those in force throughout the country. Owing to the primitive conditions and low health standards prevailing



in the country districts and the smallness of the staff available, these laws are naturally of a simple nature and do not in any way meet the higher requirements of a modern town like Cairo. The necessity for local municipal by-laws has been recognized in the case of Alexandria, where, under the Decree instituting the Municipality, power is given to issue Arrêtés which, after approval by the Minister of Interior, are applicable to both local and foreign subjects. Provided that the increased staff asked for in the previous part of this report can be obtained, I would propose that a similar system should be applied to Cairo. The method suggested is the following: A basic Decree would be issued giving powers to the Minister of Interior to make regulations in the form of Arrêtés on certain specified subjects on the recommendation of a Cairo Board consisting of, say, the Governor, the Commandant of Police, the Medical Officer of Health, a delegate of the Tanzim, the Chef du Parquet, and two selected notables of the town. Each Arrêté would, after approval by the Mixed Courts, be applicable to both native and foreign subjects.

“The following is an indication of the sort of subjects regarding which such Arrêtés would be needed:—

“1. Street cleanliness.—An Arrêté prohibiting the fouling of streets with domestic and other refuse.

“2. Wells.—Registration of all wells, with power to close all such as contain water unfit for drinking.

“3. Private roads.—Power to compel the owners of such to keep them in a state of cleanliness.

“4. Powers of control over all persons following certain occupations, such as zabbalîn (scavengers), public water carriers, itinerant vendors of milk, ices, and beverages.

“5. Additional powers to empty cesspits where a case of typhoid fever has occurred in the house, even when the cesspit is not full.

“6. Similar powers to empty and disinfect water tanks under the same circumstances.

“7. Powers to clean and disinfect dirty houses in times of epidemics when the Medical Officer considers that this would tend to prevent or check any dangerous infectious disease.

“8. Regulations for mooring sites on the river banks.

“9. Imposing conditions on the transport of matters giving off dust or objectionable odours.

“10. Regulations for the construction of cesspits.

“11. Prohibition of *echeches*, except under certain conditions.

“12. Regulation of cemeteries.”

It will be agreed that the foregoing is a somewhat comprehensive scheme, but there can be little doubt of the necessity of taking the first practical steps for its ultimate realization. The new Decree on infectious disease will give a certain power to the health officer which was before lacking, and that in itself is a first step for the amelioration of the present conditions. Other steps must follow, and it is proposed to ask the Ministry of Finance for a considerable credit for the purpose of making a beginning with the programme in 1913.

As regards legislation, the Contentieux has emitted the opinion that

“..... il est d'avis que, le Gouverneur du Caire ayant le pouvoir réglementaire dans les limites de son Gouvernorat, et constituant, d'autre part, pour le Caire, l'autorité municipale, les matières indiquées dans votre note susdite et toutes autres similaires peuvent être réglementées, pour la ville du Caire, par simple arrêté du Gouverneur, sans qu'il soit besoin de recourir à une autorité supérieure.

“ Il va sans dire que ces règlements, pour être applicables aux étrangers, devront être soumis à l'appréciation de la Cour d'Appel Mixte.

“ Ce Contentieux croit devoir néanmoins attirer l'attention de l'Administration sur l'intérêt qu'il y aurait à faire réglementer ces matières par le Ministère de l'Intérieur qui élaborerait à cet effet des règlements généraux dont l'application pourrait être étendue à toutes les villes et localités du territoire, au fur et à mesure que la nécessité s'en ferait sentie, par simple arrêté ministériel.

“ En dehors des nombreux avantages provenant de l'unité de réglementation, on éviterait ainsi la nécessité de retourner devant la Cour d'Appel Mixte toutes les fois qu'une Municipalité voudrait réglementer une quelconque de ces matières.”

This opinion is a most satisfactory one, and if steps taken in accordance with it are subsequently upheld by the Courts, there is at least hope for the improved condition of affairs in Cairo, which is so much to be desired.

#### (a) WATER SUPPLY.

In the month of March the following note was written on the then state of the Cairo water supply :—

“ The new installation of the Cairo water supply has made effective progress in the past year, but owing to disturbances of trade and transport service in Europe, considerable delay has taken place in the delivery of certain material, such as the operating platform for the filter house and the roofing of the same. It appears to be uncertain when this can be delivered, but meanwhile temporary arrangements will be made for the platform, so that the filters can at least be put into operation. Under these conditions it is expected that the installation will be in a position to begin work about the middle of April.”

Since that period, progress has been made. The roof has been placed in position, and the working platform is now in course of erection. At the present time (June 1912) ten of the twenty filters have passed their bacteriological and mechanical tests and are contributing to the water supply of the city ; the remaining ten are in the course of being tested. It is expected these operations will be completed by the end of the month and the produce of these filters will be flowing into general circulation.

The initial tests of the filters were considerably interfered with and complicated by the presence of algae in the Nile, and their existence gave rise to considerable difficulty. This has now been surmounted, and the filters are completely free. Reference has been made in detail to these conditions in a previous part of this report (*see* page 99).

#### (b) DRAINAGE.

The drainage works are progressing, and Mr. Carkeet James, the Controller-General, has kindly furnished the following particulars as to the state of the work at the end of 1911 :—

“*Main Collector and Rising Main.*—Summarising the works apart from a consideration of the individual contracts, the main outfall from Cairo to Khanka has made a great advance. 5.9 kilometres of the main collector have been completed between Cairo and Palais de Koubbeh, and also a length of 1.4 kilometres near the obelisk at Mataria.

“A certain amount of work has been done on the section in the Gebel Canal, but it has been suspended here since the beginning of August owing to the presence of flood water in the canal. However, as soon as the canal is dry, work will be resumed.

“The cast-iron rising main (11.74 kilometres in length) has been completed from Kafr el Gamus, where the main pumping station is to be situated, to Khanka. Of the total length of 25.36 kilometres to be constructed between Cairo and Khanka, 19



kilometres have been completed, but it must be remembered that the section of the gravitating main collector still to be constructed is the deep one which presents many difficulties and will progress slowly; therefore, this work is not in advance of the contract time and an earlier completion cannot be expected.

*"Pumping Station at Kafr el Gamus.*—The construction for the foundations for the main pumping station at Kafr el Gamus has continued throughout the year, but the progress has not yet been as good as I anticipated. It was found necessary to excavate deeper than I first intended, and operations had to be suspended for a short time during autumn while the contractors were fixing additional pumps. The work is, however, again proceeding, and by March 1912 I consider the foundations of the engines should be finished.

"The construction of the screening chamber has been completed to ground level.

*"Surface Water Drainage.*—The surface water drainage has been temporarily abandoned.

"When the contract for this work was let, the intention was to construct at once a large number of drains and temporarily allow the flow to be discharged into the river, but this project was abandoned. An agreement was, therefore, entered into with Messrs. Hughes and Lancaster, the contractors, whereby the remaining portion of this work was abandoned, and in its place was substituted an equal amount of sewers. Prior to this agreement, the amount of money spent on this part of Contract II was about one-half of the amount allocated for this work, leaving L.E. 64,000 to be expended on the new work which has now been started in the Ghamra quarter of the city.

"The scheme for the temporary disposal of the surface water (Contract XII) pending completion of the larger works, is well in hand.

"The 8" main from the old Ismailia pumping station in the Sharia Abbas, to the red mountain, is practically completed; the distance is 4,600 metres. The 24" cast-iron main, 2 kilometres in length, has also been laid.

"The new pumping station is not yet completed. The contractors have had great difficulties with the foundations, but it is hoped that it will be ready in time for the machinery which should arrive from England next February.

*"Compressed Air System.*—The works undertaken in the city have not been so heavy as last year, but a considerable amount of great importance has been done.

"Six of the large ejector stations have been sunk and are practically completed. The ground met with in nearly all cases was bad, and compressed air for sinking the tubbing was used.

"The large 33" gravitating main from the old Ismailia Canal to Ghamra has been laid.

*"Zeitun Sewers.*—The Zeitun sections of Messrs. Hughes and Lancaster's contract have made excellent progress. This gravitating portion of the scheme is on the combined system.

"30,000 linear metres of pipes, or 65 per cent. of the total length, varying in diameter from 21" to 8", have been laid up to date, and also the disconnecting chambers for nearly the whole area have been built. The areas worked in are Abbassia, Zeitun, Helmia and Kubba.

*"Khanka Sewage Farm.*—A considerable quantity of work has been done at Khanka during the year.

"Between five and six hundred convicts have been employed levelling the farm, and 120 feddans are now ready for being laid out as cultivation areas. Additional accommodation has had to be provided for the mechanics and men employed in working the pumps, and some mud brick houses have been erected by convict labour.

“An Agricultural Commission was formed towards the end of last year composed of Mr. C. Carkeet James (Controller-General, Cairo Main Drainage Department), Mr. G. C. Dudgeon (Director-General, Agricultural Department), Major de Lotbinière (Survey Department), and Mr. W. B. Bentley, acting as secretary to the Commission.

“The object of this Commission was to draw up a scheme for the preparation of a certain portion of the 3,700 feddans set aside for the Sewage Farm, so that cultivation can be taken in hand as soon as sewage is received, the anticipated date being early in 1914.

“Owing to the exposed position of Khanka to the high winds which prevail during the winter months, the Committee directed its attention to the raising of belts of trees to act as a protection to young crops. 18 feddans have now been planted out with cuttings and young trees. The principal trees grown are : eucalyptus, tamarisk, sunt, Australian wattle, and castor oil.

“A large nursery, covering an area of three feddans, has been constructed. It is used for experimental work and for the forcing of young cuttings and trees of which there are in pots no less than 33,000, including sunt, eucalyptus, wattles, parkinsonia, and ornamental trees such as cassia, moringes, cypress, pines, thuyas, bauhinia, etc., etc.

“A small vegetable experimental garden has been laid out, which is entirely irrigated by sewage effluent from an experimental filter dealing with the sewage from the quarters, and excellent results have been obtained.

“The whole of the work in connection with the farm is entirely carried out by convict labour under the management of an English gardener and two native gardeners.

“As the experimental farm has been gradually enlarged two extra pumping installations have been erected at a small cost.

“*Réglement to accompany Decree relative to House Connections.*—During the winter of 1910–1911, a sub-committee consisting of delegates from the Department of Public Health and the Main Drainage Department, met weekly to draft detailed regulations.

“These have been compiled and have been sent to the Contentieux for consideration : if they conform to the Decree approved by the Mixed Court of Appeal in 1898, the necessary steps will be taken for its promulgation.”

#### (c) CONSERVANCY.

With reference to the Scavenging and Watering Service, the following are extracts from the Chief Inspector's report :—

“The Scavenging and Watering Service operates over an area of 4,348,000 square metres of roads and streets, squares and lanes, in the city and suburbs of Cairo, and also over an area of 402,744 square metres on the island of Gezira on the west bank of the Nile.

“According to the Tanzim figures, the paved area in Cairo was as follows :—

	Square Metres.
At the end of 1910 ... ..	2,520,510
Increase during 1911... ..	127,490
Total paved area at end of year ... ..	2,648,000
Earth roads (approximately) ... ..	1,700,000
	<hr/>
	4,348,000
Gezira and west bank of Nile ... ..	402,744
	<hr/>
TOTAL... ..	<u>4,750,744</u>



“An increase of permanent credit was allotted to the Service in 1911 amounting to L.E. 2,747. This was granted to deal with a surface of 114,786 square metres of paved roads and 8,200 square metres of asphalted roads. A deduction of five per cent. on the total budget of the Service was, however, made by the Ministry of Finance for purposes of economy. To meet this reduction a revised grading of areas for scavenging and watering was necessarily imposed, and the following standard grades were fixed :—

“GRADE A :—

“*Watering*.—Applicable to tarred and macadamized areas in the centre of the city, where full traffic passes : three waterings per day.

“*Scavenging*.—Applicable to the same areas : regular scavenging.

“GRADE B :—

“*Watering*.—Applicable to macadamized roads, untarred, other than those comprised in *Grade A* : two waterings per day.

“*Scavenging*.—Applicable to the same areas : bi-weekly scavenging.

“GRADE C :—

“*Watering*.—Applicable to tarred roads in unfrequented areas, and suburban roads : one watering per day.”

With reference to this measure, the Chief Inspector writes as follows :—

“I estimate that as the result of the adoption of this system at the beginning of 1911, about one-third of the total city area was affected. Thus :—

	Square metres.
Total macadamized area on 1st January 1911 ... ..	2,520,510
One-third of this total ... ..	840,170

“This latter figure was from the beginning of the year placed on Grade C. for watering, the remainder of the total being kept on Grade A. The economy of water, calculating one litre per square metre, is :—

$$840 \text{ cubic metres of water at 8 milliemes} = \text{L.E. } 6.720 \text{ milliemes per day,} \\ \times 365 = \text{L.E. } 2.453 \text{ per year,}$$

which represents approximately the figure by which the budget of this Section was reduced at the beginning of the year.

“During the course of 1911 the following areas of roads were added, and graded as shown below :—

Area.	Scavenging.	Watering.
7,100	A	A
15,160	A	B
520	A	C
22,255	B	B
31,655	B	C
50,793	(Gezira) special grade.	
<u>127,483</u>		

“ The following table shows the economy of water brought about by this system :—

TABLE XLVIII.  
WATER CONSUMPTION.

	1910.	1911.
	Cubic metres.	Cubic metres.
December ... ..	29,864	31,447
January ... ..	33,129	24,426
February ... ..	42,109	25,638
March... ..	45,111	45,127
April ... ..	77,977	53,946
May ... ..	84,449	62,808
June ... ..	91,664	70,306
July ... ..	86,058	69,711
August ... ..	96,933	72,449
September ... ..	75,403	56,066
October ... ..	66,347	48,012
November ... ..	38,793	28,859
TOTAL ... ..	767,837	588,795

“ As regards depotoirs, the following figures give the daily output of street rubbish, which, it will be seen, is not less than 215 tons daily :—

TABLE XLIX.

Depotoirs.	Double Van Loads.	Single Dust Cart Loads.	Donkey Cart Loads.
Mataria ... ..	—	18	10
Husseinia ... ..	41	112	—
Shanawani... ..	—	43	—
Shubra ... ..	—	35	—
Dokki ... ..	6	4	—
Giza ... ..	—	10	—
Madbah ... ..	16	22	2
Madbah Screen... ..	36	14	—
Market ... ..	3	—	—
Baths ... ..	—	173	—
Total... ..	102	431	12

Double van loads... .. 102 = 204 single loads  
Single dust cart loads ... .. 431 „  
Donkey cart loads ... .. 12 „  
Total loads ... .. 647  $\times \frac{1}{3}$  ton = 215  $\frac{2}{3}$  tons per diem=78,840 tons per annum.  
Daily average quantity of rubbish consumed by destructor, 30 tons.

“ Its original cost was L.E. 9,324 and the annual cost of maintenance is L.E. 1,670.”

(ii) ALEXANDRIA.

The improvements connected with sanitation, which have long been designed by the Alexandria Municipality, are still awaiting the provision of funds, which will be derived from a projected further loan of L.E. 500,000. The negotiations with the various European Powers interested have not yet arrived at completion, and consequently the drainage scheme and other proposals are temporarily in abeyance.



The public health section of the Municipal Administration has, however, done excellent work in plague prophylaxis, in the control of infectious diseases and of food supply. It has effected careful control of the water supply, and no less than 1,132 samples have been analysed, while samples to the number of 3,182 of milk, butter, oil, flour, and various other articles of food consumed by the population have been examined; of these samples, 1,856 were found to be good, 535 were suspected of adulteration, 567 were clearly adulterated, while 265 were unfit for consumption owing to various stages of putrefaction.

The following paragraphs explain the general state of the three matters of main interest to public health :—

(a) *Water Supply*.—The water supply, which was the first mechanical installation set up in Egypt (Jewell system) continues to be satisfactory. An effort was recently made to provide an automatic regulator of the coagulant, but the design apparently was somewhat faulty, for it has now been given up and another system is about to be tried.

(b) *Drainage*.—As above indicated, there has been practically no change in this direction, and the arrangements are the same as those referred to in detail in the Report for 1909.

(c) *Conservancy*.—The conservancy of the city is still carried out on the elementary system of dumping, and the proposal mentioned in the Report for 1909 for applying the Schoeller system has made no progress.

### (iii) PORT SAID.

In Port Said the chief feature of the year was the fact that the town was endowed with an international municipality, a proposal which had been long under consideration, and the difficulties of which apparently required a considerable time to surmount. The initial difficulties at any rate have now disappeared and the municipality is doing good work.

(a) *Water Supply*.—The new water-works were opened during the year and are a typical example of the Puech-Chabal system. The output of water appears to be satisfactory, so far as can be judged by the absence of complaints. It is maintained and managed by the Suez Canal Company.

(b) *Drainage*.—The drainage scheme advanced a stage during the year inasmuch as certain somewhat important modifications were introduced on the suggestion of the Municipality. These modifications have been approved in principle by this Department and at present detailed plans are in course of completion. A system of drainage is most necessary in Port Said, as has frequently been pointed out, and there is no doubt that its completion will effect a long wanted and pronounced improvement in the sanitary condition of the town which as a rule in many parts is rendered most unpleasant by the unsatisfactory condition and faulty construction of existing cesspits.

(c) *Conservancy*.—As will be judged by the foregoing, the state of conservancy in Port Said frequently leaves much to be desired, but it is the fault of circumstances and conditions with which it is difficult to struggle successfully. Much of the ground is low-lying and the method of raising this by the regular deposit of refuse covered *pari passu* by an adequate layer of sand is now being carried out—a step which will certainly increase the amenity of the town and in the end be a source of benefit to the people; and to the Government and the Municipality as a result of the increasing value of the land.

### (iv) SUEZ.

(a) *Water Supply*.—The Puech-Chabal water installation continues to satisfy the public, and no complaints have been made. It is maintained and managed by the Suez Canal Company.

(b) *Drainage*.—Steps have been taken by the municipality to direct interest to the question of drainage, and it is understood that steps are being undertaken in this direction.

The question of the pilgrimage, which is one of the chief interests of Suez, is dealt with in another section of this Report (*see* page 84), as is also the anti-malarial campaign (*see* page 68).

#### G.—PROVINCIAL COUNCILS.

In previous reports reference has been made to suggestions from time to time offered to the Provincial Councils for employing a certain proportion of their financial resources towards improving the sanitary condition of their provinces, and for distributing medical aid in elementary or special forms to the people of the provinces. In the earliest year of their re-constitution the Councils were inclined to regard sanitation as having little connection with education, for which they presumed with some apparent reason their special powers were mainly intended. It is satisfactory to report that a wider view of their responsibilities and of the benefits of sanitation and medical aid has recently prevailed, and they have taken up with some keenness certain suggestions as to lines on which their usefulness might be directed. These suggestions have been consolidated in a Note which represents a summary statement of what may be called the Provincial Councils Sanitary Programme, and which has been issued to the various Provincial Councils. The note is as follows :—

(1) *The Training of Barbers*.—The object of training these barbers is to produce an individual who shall be of a higher standard of intelligence and competence than the average of those now existing, so that they may be in a position to offer “first aid” in cases of accident or illness, and at the same time fulfil the duties each within his own village or circumscription of sanitary assistant to the Medical Officer of the markaz.

The first essential is that the barber shall go through a course of training at a Government hospital, preferably in his own mudiria. The course will be of three months’ hospital training, and a curriculum, which has been decided on by the Department, will be followed by the Medical Officers who are in charge of the training.

The view taken is that as the Department insists upon having competent hospital assistants, or *musaadeen il sahi*, in the villages, the existing barbers should be given the first chance of qualifying for these posts. In order, therefore, to compensate the barber during his period of instruction for the loss of his revenue in his village, it is desirable that the Provincial Councils should pay him a sum of at least P.T. 120 a month if the course takes place within his own mudiria, and P.T. 150 per month if at some other Government hospital. Once the course is completed he will return to his village and will be under the immediate supervision, for another month, of the Medical Officer of the markaz. The pay will cease to be drawn with the termination of the course of instruction. A form of agreement has been drawn up which every barber who comes for training will be required to sign before receiving his first month’s pay.

(2) “*First Aid*” *Chests*.—These are means for affording to the sanitary assistants and barbers in the villages the means of carrying out the duties which are now being laid upon them, in the same way as the markaz has a dispensary fitted out for the markaz Medical Officer. They are necessarily arranged on a very modest scale, and are of two categories, (a) and (b), the former being designed for the trained, and the latter for the untrained barber. Category (a) costs P.T. 450, and category (b) costs P.T. 400. It is proposed that every trained barber who becomes a *musaad il saha* or hospital assistant should be furnished with a first aid chest of dressings and simple remedies of category (a) while a



selected number of those who have not gone through the course of training or having gone through it have not taken sufficient advantage of their opportunity will be furnished with a first aid chest of the second category.

(3) *The Training of "Dayas"* (Midwives).—It is just as essential to train the village midwife as it is to train the village barber. The difficulty is to find young women of the proper class and of sufficient intelligence and respectability to undertake the work. It is, however, felt that in some of the mudirias this will be possible. They will be drawn from the village where they live and where they will be expected to practice. It will be necessary, however, in such cases, that the Mudiria Council provides a lodging of some kind where these women can be safely housed and looked after during their course of training. This should embrace at least a month's training at the Government hospital, and a month's instruction at a children's dispensary (*see* Art. 4) which it is hoped will shortly be established in every mudiria town.

(4) *Infants' Dispensaries*.—A dispensary for the relief of sick children is an essential adjunct in every mudiria town, at any rate for the present. As the system grows, and as qualified nurses become trained, it is hoped that they may be multiplied in the towns and large villages throughout the country. One of the essential features is that a well trained European nursing sister, specially experienced in dealing with young children, should be placed in charge. The cost of such a dispensary with its personnel, equipment and materials amounts to some L.E. 500 or 600 a year, and if properly managed is capable of rendering service which is a most economical investment for that sum. Its objects are threefold :—

(a) To afford relief to the suffering of young children and to preserve infant life to the utmost of its capacity ;

(b) For affording instruction in cleanliness, proper methods of feeding, and the care of children by mothers ;

(c) To serve as a training ground for "dayas" in so far as regards the care of children.

If these objects are intelligently and persistently pursued, it is probable that considerable influence may be brought to bear on the women of the country.

(5) *Village Shelters* (*Mustashfiat il Qararia*). A further necessity for village life is a shelter to which cases of infectious disease can be immediately moved, and in which they can be isolated from their family and surroundings and placed in comfort where they can be attended to by the doctor. One of the chief drawbacks to dealing with infectious disease in this country is the difficulty of the isolation of the sick. This cannot be justifiably insisted upon unless a fitting shelter is provided. Tents or huts, whether of matting or *boos* (reeds), are frequently used, but they have their drawbacks in every part of the country and at some season of the year. It is proposed, therefore, that these village shelters shall be erected in the larger villages from time to time as funds permit, choosing those preferably where the best trained barbers are to be found. Type-plans of these shelters have been drawn up by the Engineering Section, and will be distributed to such Mudiria Councils as express a desire to proceed with their construction. The cost will be about L.E. 250 in sun-burnt brick, and about L.E. 300 in kiln-burnt brick.

(6) *Birkas*.—It is well known that these are a very serious source of disease to both men and animals. It is true that certain Administrations of the Government are empowered to fill such birkas under conditions which do not involve very great expense, and under the rules by which the Government Lands Department concedes birkas to private individuals, it is pretty certain that no birka will be taken over by a private individual for his own

profit unless the future value of the birka is considerably greater than the cost of filling. The consequence is that other birkas which are equally or more dangerous to the people remain unfilled owing to the cost of filling being greater perhaps than the future value of the reclaimed land. It is in these cases that the provincial Councils might step in, and by taking over from the Government Lands Department and filling in the birkas in question, would carry out a most useful and necessary work. The Ministry of Finance, with the object of furthering this measure, has issued a circular on the subject.

(7) *Water Supply*.—Provision should be made to insure a good water supply in the villages which are situated at a distance from the Nile or canals. In such villages, provided that they are not in the northern belt of the Delta, the sinking of Abyssinian pumps is the best practical way for achieving this purpose. The sanitary assistant might also be trained in the upkeep of these pumps and their minor repairs when necessary.

(8) *Travelling Ophthalmic Hospitals*.—It is hoped that one or more of these may be established, on the lines of those provided by the Cassel Trust, in each mudiria for work in the markazes, similar to that which has been provided in Gharbia.

(9) *Committee*.—Further, it is recommended that in every Provincial Council a small Committee should be nominated for the furtherance and supervision of the Provincial Councils Sanitary Programme. It is considered that four members would be sufficient, while the Inspector of the mudiria will attend in an advisory capacity, and the Director-General or his delegate will be prepared to afford any information or advice which the Councils may require.

(10) *Veterinary*.—As regards the veterinary duties of the Mudiria Councils, the Chief Veterinary Inspector of this Department has made the following recommendation: The Mudiria Councils should appoint a Veterinary Committee composed of four members, with the Mudir or his representative as president. The Veterinary Inspector of the mudiria will attend in an advisory capacity. The Chief Veterinary Inspector or his delegate will also attend in case of necessity. The Committee will assist the mudiria authorities in obtaining information as to the existence of animal and fowl diseases, and will superintend the application of all restrictive measures ordered by H. E. the Minister of Interior and the mudiria authorities. They will explain to omdas of districts all regulations and measures which will be adopted for the controlling of contagious animal diseases. Under ordinary circumstances the Committee will meet once every three months and will receive and discuss the Veterinary Report of the mudiria which will be presented by the Veterinary Inspector. In case of outbreak of a contagious disease amongst animals, they will immediately hold a meeting to consider the report of the Veterinary Inspector and will then meet as frequently as is considered necessary.

In future it may be considered advisable to institute travelling veterinary clinics or out-patients sections in the mudirias for the advice and treatment of the animals of the poorer farmers and fellaheen.

Certain adhesions to the principles of this Note were received as early as the end of 1911, but further progress has since been made, and at the time of writing (June) the following statement represents the action of the various Provincial Councils taken upon the Note—action which on the whole must be considered extremely satisfactory and hopeful if the execution and fulfilment is in any way equal to the promise.



TABLE L.  
Provincial Councils Sanitary Programme.

LIST SHOWING EXTENT OF ITS ACCEPTANCE BY THE COUNCILS.

MUDRIA.	(1) Sanitary Agents.	(2) First Aid Chests.	(3) Dayas.	(4) Infants' Dispensaries.	(5) Village Shelters.	(6) Filling of Birkas.	(7) Water Supply.	(8) Travelling Ophthalmic Hospitals.	REMARKS.
Behera ... ..	Accepted.	—	—	—	—	—	—	—	
Gharbia ... ..	"	—	—	—	—	—	—	Accepted.	
Menufia ... ..	"	—	—	Accepted.	—	—	—	—	
Daqahbia... ..	"	—	—	"	—	—	—	—	
Sharqia ... ..	"	—	—	—	—	—	—	—	
Qalinihia ... ..	"	—	—	—	—	—	—	—	
Giza ... ..	—	—	—	—	—	—	—	—	
Beni Suef ... ..	—	—	—	—	—	—	—	—	
Fayum ... ..	Accepted.	Accepted.	—	—	Accepted.	—	—	—	
Minia ... ..	"	—	—	—	—	—	—	—	
Assiut ... ..	"	(a)	—	—	Accepted.	—	—	Accepted.	(a) Decided to try it in one village in each markaz.
Girga ... ..	"	Accepted.	—	—	—	—	—	—	
Qena ... ..	"	"	—	—	—	—	—	—	
Aswan ... ..	"	"	—	—	—	—	—	—	





PART III.—SCIENTIFIC ESTABLISHMENTS.

(i) INSTITUTE OF HYGIENE AND BACTERIOLOGICAL LABORATORIES.

The following is a list of the routine examinations made during the year :—

<i>Infectious Diseases.</i>											Number of cases.
Plague diagnosis	...	...	...	...	...	...	...	...	...	...	319
Cholera (suspect)	...	...	...	...	...	...	...	...	...	...	87
Diphtheria „	...	...	...	...	...	...	...	...	...	...	464
Typhoid fever (agglutination test)	...	...	...	...	...	...	...	...	...	...	270
Malta fever	„	„	...	...	...	...	...	...	...	...	266
Paratyphoid “ B ”	„	„	...	...	...	...	...	...	...	...	257
Malaria	...	...	...	...	...	...	...	...	...	...	744
Relapsing fever	...	...	...	...	...	...	...	...	...	...	808
Miscellaneous (tuberculosis, leprosy, piroplasma, cerebro-spinal meningitis, dysentery, gonorrhœa, etc.)	...	...	...	...	...	...	...	...	...	...	441
											<hr/> 3,656

<i>Bacteriological Water Examinations.</i>											
Daily samples of tap-water in Cairo	...	...	...	...	...	...	...	...	...	...	365
Giza water supply	...	...	...	...	...	...	...	...	...	...	260
Rod el Farag wells	...	...	...	...	...	...	...	...	...	...	312
Estimation of bacillus coli in Nile water	...	...	...	...	...	...	...	...	...	...	600
											<hr/> 1,537
											1,537

<i>Chemical Analyses.</i>											
Chemical water analyses	...	...	...	...	...	...	...	...	...	...	192
Chemical analyses of food, drugs, medicines, etc.	...	...	...	...	...	...	...	...	...	...	389
											<hr/> 581
											<hr/> 581
											<hr/> <hr/> 5,774

In addition to the foregoing, the testing of certain experimental filter plants and processes under the consideration of the Department for the filtration and sterilization of drinking water has necessitated the carrying out of several thousands of bacteriological water examinations. For a period of several months, about 100 examinations were made daily. One of the most interesting items of this work was connected with a “coli survey” of the river at and above the present intake—the investigation having particular relation to a temporary discharge of surface drainage water into the Nile at Kasr el Nil. It may be said that this discharge had no special influence on the quality of the water at the intake. The discharge in question has at the moment of writing ceased, and the surface water is diverted into the newly constructed drains.

The control on the spot of the experimental filter plants as well as consultations regarding the installation and improvement of the new filter plant for Cairo occupied very considerably the time of Professor Bitter and the staff of the Institute.

Again, owing to the danger of cholera from the Mediterranean and the Hedjaz, a considerable amount of time was necessarily devoted last summer to the diagnosis (fortunately in all cases negative) of specimens from “suspect” cases of illness. These specimens came from all parts of the country, and often reached the Institute very late in the day. It was naturally essential that the examinations should be undertaken at once, and this





The investigation begun on pellagra has been dropped in consequence of the impossibility of pursuing it with the existing staff.

Investigations were begun in connection with the method of infection in relapsing and typhus fevers (which are of considerable importance in this country), but it has been necessary to suspend these investigations for the same reason.

In addition, the investigations regarding elephantiasis in connection with filaria in certain places in Giza Province have been continued, though for the time being they have been of necessity temporarily abandoned.

It is believed, however, that before long, extended possibilities for work will be afforded, for the Ministry of Finance has recently granted a credit for building a second storey to the laboratories ; on the completion of this work there will be accommodation available for some considerable additional staff, the necessity for which has already been fully demonstrated.

A Laboratories Committee appointed by the Government in January, 1911, has recently been sitting. This Committee is composed of :—

Lord Edward Cecil, D.S.O., Under-Secretary of State for Finance (President),  
 Mr. W. P. G. Graham, Director-General of this Department,  
 Dr. M. A. Ruffer, C.M.G., President of the Quarantine Board,  
 Mr. E. M. Dowson, Director-General of the Survey Department,  
 Dr. H. P. Keatinge, Director of the School of Medicine,  
 Dr. H. Nolan, Controller of the Security Section of the Ministry of Interior.

The report of the above Committee is now in hand, and it is hoped that it will clear the way for an extended organization of laboratories which will afford the means and the impetus to such extended scientific investigation as is indispensable if the many problems waiting to be solved in this country are to be systematically attacked.

Dr. Bitter reports, as regards anti-scorpion serum, in the following terms :—

“The serum was worked out at the Institute of Hygiene by Dr. Todd and was for a time prepared in Cairo. This could only be done on a small scale and under considerable difficulties, and therefore as soon as the results were found to be satisfactory and the serum could be regarded as having passed the experimental stage, arrangements were made with the Lister Institute in London for its preparation on a larger scale. The horses which had been immunized in Cairo were sent to London and the immunization of other horses was commenced there. The scorpion poison is now collected in Upper Egypt and sent to the Lister Institute, which prepares the serum and forwards it to Egypt.

“The results given by the serum continue excellent, and it is much appreciated in Upper Egypt.

“The following is a summary of the reports on its use during the past year :—

TABLE LI.

CASES TREATED WITH ANTI-SCORPION SERUM IN 1911.

Age.						Number of Cases.	Lived.	Died.	Death Rate %.
From	0- 5 years	...	...	...	...	19	16	3	16
„	6-10	..	...	...	...	34	34	0	0
„	11-15	..	...	...	...	18	18	0	0
„	16-20	..	...	...	...	13	13	0	0
Over	20	„	...	...	...	43	43	0	0
Total						127	124	3	2·3

“ The total of 127 for the year 1911 is more than that for the previous five years (104 in all) which appears to indicate that the people have recognized the value of the serum treatment and are therefore considerably more prompt in seeking medical aid after the occurrence.

“ Details of the three fatal cases mentioned in the table above, are as follows :—

- (1) Child aged 1 year and 8 months : Serum 1 hour after sting : death 5 hours later.
- (2) Child aged 4 years : 10 c.c. serum 2 hours after sting, but condition of child hopeless and site of sting unknown.
- (3) Child aged 4 years : 10 c.c. serum three-quarters of an hour after sting.

“ It is to be noted that cases (1) and (3) were from the Oases of Dakhla and Kharga respectively, and it is possible that the stings were either not those of scorpions, or were caused by a scorpion of a different species (and which is known to exist in the locality named) from that usually met with in the Nile Valley, and one against which possibly the serum is not active.”

The following is a table showing the numbers of deaths attributed to scorpion stings in the last five years. While a slight general reduction has taken place it will be noted that the reduction is specially marked in Cairo, where the serum is naturally more quickly available than in the districts and villages.

TABLE LII.

DEATHS FROM SCORPION STINGS, 1907 TO 1911.

Locality.	1907.	1908.	1909.	1910.	1911.
Cairo ... ..	26	18	25	14	12
Damietta ... ..	1	—	—	—	—
Giza ... ..	—	—	—	2	—
Benha ... ..	1	—	—	—	—
Fayum ... ..	7	5	5	5	4
Beni Suef ... ..	3	1	2	1	1
Minia ... ..	2	5	3	2	5
Assiut ... ..	15	10	19	22	10
Sohag ... ..	8	7	4	5	4
Qena ... ..	9	11	6	5	7
Aswan ... ..	6	9	7	2	1
Total ... ..	78	66	71	58	44

Every report of a death from scorpion sting is accompanied by details of the circumstances under which the serum was or was not administered.

In order to extend the usefulness of this anti-scorpion serum throughout the country, it is essential that it should be supplied in such a way as to be available immediately after the patient has been stung. This is impossible as long as an ordinary hypodermic needle is necessary and some one who knows how to use it. An attempt is being made therefore to devise a tube with needle attached which, being easy to manipulate, will admit of the serum being administered by the local village sanitary agents.



(ii) VACCINE INSTITUTE.

The quantity of vaccine lymph collected during 1911 amounted to 1,004,000 units, as compared with 914,000 units during 1910. There remained 100,000 units from 1910. The issues during the year were as follows :—

To Health Inspectors in Cairo District and Provinces (gratis) ...	336,865
To the Police, Wakfs Administration, and Charitable Institutions (gratis) ... ..	10,745
<i>Sold.</i>	
To Egyptian Army ... ..	7,320
To Sudan Government ... ..	57,550
To Army of Occupation ... ..	1,795
To Ministry of Education ... ..	14,647
To Alexandria Municipality ... ..	100,600
To State Railways Administration ... ..	100
To Prisons Department ... ..	50
	182,062
To dispensaries and medical men ... ..	2,864
Used for vaccinating calves ... ..	409,464
Total issued ... ..	942,000
Remaining on 1st January 1912 ... ..	162,000
Total ... ..	1,104,000

Receipts from sale of vaccine amounted to L.E. 460.

The results obtained from the lymph continue to be most satisfactory. According to reports of Public Health Inspectors, successful results have been obtained in 97·7 per cent. of the primary vaccinations and in 84·5 per cent. of the re-vaccinations.

Details of the precise method of manufacture, storage, and distribution, were given in the Report for 1910.

(iii) ANTIRABIC INSTITUTE.

Dr. H. Bain, the Director of the Antirabic Institute, reports as follows :—

“ During the year, 681\* persons presented themselves at the Institute to undergo the preventive treatment for hydrophobia. From this total it is necessary to deduct 117 cases in which the treatment was or should have been interrupted (the animal proving after ten days’ observation to be immune from rabies) and also four cases in which the patients voluntarily interrupted the treatment without cause. The statistics refer actually, therefore, to 560 persons (as compared with 583 last year).

“ The monthly number of patients treated in the Institute is shown below :—

January ... ..	58	July ... ..	38
February ... ..	35	August ... ..	44
March ... ..	51	September ... ..	53
April ... ..	45	October ... ..	38
May ... ..	45	November ... ..	52
June ... ..	48	December ... ..	53

“ Racially, these 560 patients may be subdivided as follows :—

Egyptians ... ..	424
Europeans resident in Egypt ... ..	58
Foreigners from Palestine and Syria ... ..	78

\* This number exceeds by 23 the number of cases (658) which occurred in the previous year.

“ The topographical distribution of the cases was :—

Cairo Governorate ... ..	88
Alexandria „ ... ..	6
Canal „ ... ..	2
Behera Mudiria ... ..	18
Sharqia „ ... ..	66
Qaliubia „ ... ..	30
Daqahlia „ ... ..	18
Gharbia „ ... ..	96
Menufia „ ... ..	56
Fayum „ ... ..	7
Beni Suef „ ... ..	6
Giza „ ... ..	17
Minia „ ... ..	29
Assiut „ ... ..	22
Girga „ ... ..	11
Qena „ ... ..	5
Aswan „ ... ..	1
Sudan ... ..	4
Syria and Palestine ... ..	76
Abyssinia ... ..	1
Europe (Switzerland) ... ..	1

“ Infection took place as follows :—

Bitten by dogs... ..	508
„ „ cats ... ..	32
„ „ donkey ... ..	1
„ „ wolves ... ..	8
„ „ monkeys... ..	2
„ „ persons infected or suspected of being infected with rabies... ..	8
Infected during work in the laboratory ... ..	1

“ Sixty-five persons were bitten about the head, 242 on other uncovered parts of the body, and 253 through clothing.

“ The number of persons bitten does not correspond to the number of rabid animals reported by the Veterinary Service, since the same animal frequently bites several persons ; thus 494 animals were responsible for 681 bites.

“ For the treatment of patients I had already, as stated in my previous reports, replaced the system of attenuation of the spinal cords\* by that of dilutions ; dilution is not made with absolutely fresh spinal cords, but with cords kept several days in the ice-box in neutral glycerine at 30° Beaumé. Last year I decided that spinal cords thus kept for five days were too weak, and only used spinal cords which had been in glycerine three days. During this year the same method was consistently adopted.

“ I commence the treatment with emulsion No. 3, which is  $\frac{1}{4}$  centimetre length of spinal cord in five cubic centimetres of water, making approximately a dilution of 1:160.† Emulsion No. 2 contains  $\frac{1}{3}$  centimetre of spinal cord in five cubic centimetres of water—a dilution of 1:120. Emulsion No. 1 contains  $\frac{1}{2}$  centimetre of spinal cord in five cubic centimetres of water—a dilution of 1:80. These emulsions are administered subcutaneously during fifteen, eighteen, or twenty-one days, according to the gravity and position of the bites, which for this purpose are divided into three categories : (1) Bites about the head—these are most serious, especially those of the face ; (2) Bites of other uncovered parts of the body ; (3) Bites through clothing.

“ For all bites of the first category, and often for those of the second, I use sero-therapy in conjunction with vaccination. The first three days of treatment I inject into the patient ten cubic centimetres of :—

Decimal emulsion of fresh spinal cord in physiological serum... }	Equal parts.
Antirabic serum... .. }	

\* The attenuation of the spinal cords was done by desiccation at 23° shaded from the light, according to Pasteur's original method.  
† One centimetre length of spinal cord weighs about 12·5 centigrammes, the weight of the rabbits being not more than 1,500 grammes.



“ The patient is afterwards treated with emulsions Nos. 3, 2, and 1, which are repeated till the end of the treatment.

“ The statistics include five deaths ; the table below comprises full details of the cases :—

TABLE LIII.

Name.	Residence.	Date of Bites.	Position of Bites.	Number and Nature of Bites.	Animal.	Duration of Treatment.	Died.	Place.
Atich el Sayed ...	Santa town.	Dec. 2, 1910.	Nose. Upper lip. Left fore-arm.	2 slight. 1 rather serious. 2 " "	Dog.	21 days from 4.12.10 to 24.12.10	Feb. 21	Santa town.
Yanni Nicolas ...	Ashmun Goris, Ashmun.	Jan. 30, 1911.	Left hand.	5 rather serious.	Dog.	21 days from 1.2.11 to 21.2.11	March 14	Shebin el Kom Hospital.
Mahbub Abdalla...	Helwan.	May 3, 1911.	Left hand.	3 serious.	Dog.	21 days from 11.5.11 to 31.5.11	June 27	Kasr el Aini Hospital.
Ahmed Afifi ... ..	Singalf. Memf.	May 15, 1911.	Right fore-arm. Left " " Right heel.	3 slight. 4 " " 5 (2 serious).	Dog.	21 days from 18.5.11 to 7.6.11	June 29	Singalf village.
Mahmud Bayumi...	Ezbet el Minshawi. Zifta.	July 7, 1911.	Head.	2 serious.	Dog.	21 days from 9.7.11 to 29.7.11	Sept. 26	Ezbet el Minshawi.

“ In accordance with the custom of antirabic institutes the statistics only comprise deaths taking place more than fifteen days after the end of the treatment, since immunity is not acquired until this period at least has elapsed.\* Deaths occurring before the expiration of this period are due to the severity of the virus, the gravity of the bites, and the delay in coming to the Institute, and should therefore not be counted.†

“ These five cases, in proportion to the 560 patients treated, give a death-rate of 0·89 per cent.

“ The total mortality includes also eight deaths occurring during the treatment, or less than fifteen days after its termination.‡

“ It will be seen that the number of persons treated in 1911 is 23 less than that for the previous year, the number of natives being four, and of Europeans 25 less. On the other hand, the number of foreigners who come for treatment to the Pasteur Institute of Egypt shows a regular increase. The number, which was 21 in 1906, and 22 in 1907, rose to 36 in 1908, 48 in 1909, 72 in 1910, and 78 in 1911. With the exception of one case from Abyssinia, these cases all came from Asia Minor (Palestine and Syria).”

#### (iv) KHEDIVIAL CHEMICAL LABORATORY.

Since the death of the late Dr. Off, no assistant chemist has been appointed in his place, and as the employment of M. Pappel, chief chemist, was necessary in connection with the work on water supplies, the work of the Khedivial Chemical Laboratories may be said to

\* This period is a minimum : it is not till twenty-two days after the end of the twenty-one days' treatment that immunizing substances are with certainty found in the blood. (Remlinger, Médicaments microbiens. Bibliothèque de Thérapeutique de Gilbert et Carnot. p. 11.)

† Remlinger, in “ Bulletin de l'Institut Pasteur,” tome II, Nos. 19–20, 15th and 30th October 1904.

‡ In addition, two persons who had not undergone any antirabic treatment died in Kasr el Aini hospital ; and two deaths out of hospital took place, these patients also not having been treated. Apart from the notifications received by the Antirabic Institute the Statistical Section were informed of six other deaths of untreated persons.

have been held in abeyance during the greater part of the year. The following analyses, however, have been effected :—

TABLE LIV.

Description.	Number of Samples.
Water ... ..	192
Butter (74 adulterated ; 34 genuine ; 3 artificial) ...	111
Soap and disinfectants ... ..	49
Foodstuffs ... ..	20
Oils ... ..	26
Hashish, opium (manzoul, etc.) ... ..	83
Milk ... ..	38
Medicines ... ..	26
Various ... ..	36
Total ... ..	581

Some 215 samples of milk supplied in the provinces have also been subjected to examination ; of these, 106 were satisfactory, while 109 were inferior or adulterated. In these latter cases legal action was taken : 88 convictions were obtained, 7 cases were dismissed, while 14 remained in suspense.

On the 10th of April 1912 the authority of the Ministry of Finance was obtained for the appointment of a chemist in place of the late Dr. Off, and steps are now being taken to fill the post. When this has been accomplished, it is hoped that some of the most urgent work of the laboratory will be resumed.

In connection with this laboratory, attention may be drawn to the extreme importance of effecting a more extended and practical control of the food supply of the country, more especially as regards milk, butter, and the more common articles of food and drink. In Alexandria, the Municipal laboratories carry out very excellent work and have produced important results in the improvement of the standard of certain food substances. In other parts of the country the amount of work done in this cause is relatively small. There are, however, two points which require attention before any effective work in this direction can be carried out ; firstly, the provision of a trained staff and laboratories, and secondly a modification of the law so as to render it more effective.

The adulteration of food in Egypt is not regulated by a special law applicable to both natives and foreigners alike, but is subject to the following legislative enactments :—

In the case of local subjects, food adulteration is considered by the Native Penal Code as a *délit*, and prosecution varies according to whether the beverage or substance has been adulterated with ingredients injurious to health, or is a case of simple fraud. In the former case it is dealt with under Art. 229, which provides for imprisonment not exceeding two years and a fine not exceeding L.E. 100, or both penalties ; in the second case (fraud) Art. 302 provides for the infliction of half the above penalties.

Concerning foreigners, the adulteration of food as such is not punishable by the Mixed Code. The only provision is Art. 333, which considers as simple contravention the sale of foodstuffs harmful to health or unsound. Cases of adulteration or fraud are therefore referred to the Consular authorities to be dealt with according to the offender's national law.

From another point of view the question has often been raised as to the difficulties of deciding on analytical standards for milk, butter, and butter fat in Egypt. Such difficulties undoubtedly exist and have been very exhaustively dealt with by Mr. A. Lucas, F.I.C., Director of the Survey Department Laboratories. \* But it is certain that similar difficulties of this nature exist in other countries, and if they can be surmounted elsewhere there is no apparent reason why they should not be surmounted in Egypt.

\* "Some of the difficulties in connection with the question of analytical standards for milk, butter, and butter fat in Egypt." Cairo Scientific Journal, No. 63, pp. 297-317.



(V) SERUM INSTITUTE.

Dr. White reports as follows :—

“ During the year the Institute has been in charge of Mr. Gordon ; Mr. Rabagliati carrying on the work while the former was on leave.

“ The following tables drawn up by Mr. Gordon give the details of the work done :—

“ Cyprus animals, as formerly, have been imported for the production of virulent blood, the average being 4 per week.

“ The total number of cattle in stock on the first of each month was :—

TABLE LV.

	Baladi.	Cyprus.
January ... ..	106	25
February ... ..	106	18
March ... ..	105	9
April ... ..	105	9
May ... ..	105	19
June ... ..	108	19
July ... ..	105	24
August ... ..	103	20
September ... ..	102	17
October ... ..	101	24
November ... ..	102	22
December ... ..	111	25

“ Of the serum-producing animals 5 died, the causes of death being : syncope, 3 ; paralysis, 1 ; purpura, 1.

“ Of the Cyprus animals 7 died, the causes being : Egyptian fever, 4 ; pneumonia, 2 ; syncope, 1.

“ During the year thirteen bulls, found unsuitable for further immunisation, were killed and their blood used for the production of serum. Of these, five carcasses were sold and eight condemned, the latter on account of tuberculosis.

“ Ten ‘Baladi’ cattle were bought to replace those condemned. These, after simultaneous inoculation and double reinforcing, were added to the list of serum-producing animals.

“ The number of reinforcements and the number of Cyprus animals used for the virulent blood necessary were as follows :—

TABLE LVI.

	Reinforced.	Bled.
January ... ..	65	17
February ... ..	44	15
March ... ..	50	18
April ... ..	47	14
May ... ..	68	19
June ... ..	45	12
July ... ..	62	18
August ... ..	48	16
September ... ..	62	20
October ... ..	39	14
November ... ..	61	21
December ... ..	46	15
Total ... ..	637	199

“ The number of bleedings and the amount of serum sent to the Department were as follows :—

TABLE LVII.

	Bled for Serum.	No. of Litres of Serum.
January ... ..	200	331·900
February ... ..	184	312·200
March... ..	194	338·100
April ... ..	197	349
May ... ..	200	351·200
June ... ..	212	410
July ... ..	208	398
August ... ..	204	374·900
September ... ..	176	325·750
October ... ..	205	396·325
November ... ..	197	348·500
December ... ..	190	337·400
Total ... ..	2,367	4,273·275

“ In this last table there is included the serum produced by the thirteen animals which were bled to death.

“ The total amount of serum issued from the Institute during the year was 4,273 litres.

“ The health of the animals has been satisfactory. In this connection there is nothing special to be noted with the exception of an outbreak of Egyptian fever in one of the consignments of Cyprus cattle. This condition was diagnosed and the animals isolated before any of these were used for the production of virulent blood ; four of these animals died. Five Sudanese bulls were purchased in order to keep the strain of virulent blood going.

“ Constant attention has been given to all the technical details of the Institute. Blood films have from time to time been examined and arrangements made for the regular testing of each batch of serum bottled.

“ Experiments relative to the improvement of technical points and to the reduction of cost of the serum have been continued and amplified.

“ Experiments are at present being carried out to determine whether a larger percentage of serum could be extracted from the blood.

“ These investigations are being carried out with the co-operation of Mr. Gordon, partly at the Serum Institute and partly at the Institute of Hygiene.

“ Owing to the death of Dr. Off Bey, Mr. Silbermann has been put in charge of the section dealing with the centrifugalizing and bottling of the serum. This section has been thoroughly overhauled and attention is being given to all the details, in order to simplify the process as far as possible.

“ The amount of serum added to stock during 1911 was 76,172 doses. The amount issued during the same period was 90,058·5 doses. The total quantity of serum in stock on the 31st December 1911 was 223,724 doses of 50 c.c. each.”









PART IV.—VETERINARY DEPARTMENT.

Mr. Littlewood, Chief Veterinary Inspector, reports as follows :—

(i) CONTAGIOUS DISEASES OF ANIMALS (GENERAL).

*Rabies.*

“During the year, 44 cases were reported as occurring amongst animals (43 dogs and 1 camel), compared with 41 in 1910. The cases were reported in the following governorates and mudirias :—

TABLE LVIII.

	1911.	1910.
Cairo Governorate ... ..	19	8
Alexandria Governorate...	4	10
Girga Mudiria... ..	1	—
Assiut „ ... ..	—	1
Minia „ ... ..	2	3
Giza „ ... ..	2	1
Qaliubia „ ... ..	4	6
Sharqia „ ... ..	—	2
Gharbia „ ... ..	4	4
Daqahlia „ ... ..	2	3
Menufia „ ... ..	5	3
Behera „ ... ..	1	—
Total... ..	44	41

“An Arrêté replacing that of the 23rd of November 1905 was issued by the Governor of Cairo on the 10th of January 1912, by which all dogs in Cairo and suburbs are required to be muzzled, even when led by a leash.

“Mr. Miller reports that during 1911, 4,307 dogs were seized in Cairo by the Police and taken to the Dogs’ Home, Bulaq, against 3,245 during 1910. Of this latter number 59 remained in the home, which number, together with those seized during the year, made up a total of 4,366. These have been disposed of as follows :—

Claimed by owners ... ..	387
Destroyed, unclaimed ... ..	3,823
Sold... ..	72
Died... ..	34
Remaining on 31st December 1911 ... ..	50
Total... ..	4,366

“The following animals were placed under observation in Cairo during 1911 : dogs, 114 ; cats, 4 ; monkeys, 6 ; camels, 10 ; horses, 12 ; mule, 1 ; donkeys, 5 ; total, 152.

“In addition to the animals sent to the Dogs’ Home, the Police have destroyed 3,275 dogs and 329 cats in Cairo and suburbs during the year, as compared with 860 in the previous year.

“ M. Piot Bey, Chief Veterinary Inspector of the Alexandria Municipality, states that 4,248 dogs and cats were seized in Alexandria during the year, against 5,760 in 1910. They have been disposed of as follows :—

Claimed by owners	...	...	...	...	...	...	...	...	...	400
Destroyed	...	...	...	...	...	...	...	...	...	3,806
Died...	...	...	...	...	...	...	...	...	...	42
Total...										4,248

“ In the mudirias and governorates, 44,455 dogs were poisoned during the year, against 41,817 in the previous year.

*Glanders.*

“ Eighty-one cases of glanders were detected in Egypt in 1911 (including one in Alexandria Quarantine Station). In 1910, 130 cases were detected. The cases occurring in 1911 were distributed as follows :—

TABLE LIX.

Cairo Governorate...	...	...	...	...	...	...	...	...	37
Alexandria Governorate	...	...	...	...	...	...	...	...	35
Fayum Mudiria	...	...	...	...	...	...	...	...	1
Giza Mudiria	...	...	...	...	...	...	...	...	2
Qaliubia Mudiria	...	...	...	...	...	...	...	...	1
Gharbia Mudiria	...	...	...	...	...	...	...	...	1
Daqahlia Mudiria	...	...	...	...	...	...	...	...	2
Menufia Mudiria	...	...	...	...	...	...	...	...	1
Alexandria Quarantine Station	...	...	...	...	...	...	...	...	1
Total...									81

*Epizootic Lymphangitis.*

“ Twenty-eight cases of this disease were reported during the year, against 21 cases in the previous year. The 1911 cases were distributed as follows :—

TABLE LX.

				Destroyed.	Recovered.	Remaining under Observation.	Total.
Cairo Governorate	...	...	...	1	3	—	4
Port Said town	...	...	...	2	5	8	15
Daqahlia Mudiria	...	...	...	8	1	—	9
Total...				11	9	8	28

*Anthrax.*

“ During the year, 241 cases were reported, distributed as follows :—

TABLE LXI.

				Sheep.	Cattle.	Total.
Alexandria Quarantine Pens...	...	...	...	172	19	191
Port Said	..	...	...	4	3	7
Cairo Abattoir	...	...	...	2	—	2
Alexandria Abattoir	...	...	...	40	—	40
Alexandria City	...	...	...	—	1	1
Total...				218	23	241



“During 1910, 293 cases were reported: 217 in the Quarantine Pens, 48 in Alexandria Abattoir, 24 in Cairo Abattoir, 1 in Cairo City, 2 in Alexandria town, and 1 in Tanta town.

“The following are the ports from which the cases reported in 1911 were imported:—

TABLE LXII.

	Sheep.	Cattle.	Total.
Syrian ports ... ..	216	21	237
Mersina ... ..	—	1	1
Cyprus ... ..	2	—	2
Total... ..	218	22	240

*Black Quarter (Charbon symptomatique).*

“Eighteen cases in sheep were detected during the year in Alexandria Quarantine Pens, imported from Alexandretta, against two cases in the previous year.

*Foot-and-Mouth Disease.*

“947 cases were reported from the interior of the country during the year in the following governorate and mudirias :—

TABLE LXIII.

Suez Governorate ... ..	4
Minia Mudiria ... ..	21
Beni Suef Mudiria ... ..	14
Fayum Mudiria ... ..	53
Giza Mudiria ... ..	33
Qaliubia Mudiria... ..	19
Sharqia Mudiria ... ..	73
Gharbia Mudiria... ..	173
Daqahlia Mudiria ... ..	221
Menufia Mudiria... ..	56
Behera Mudiria ... ..	280
TOTAL ... ..	947

“Besides the above, 107 cases were detected in Alexandria Quarantine Pens amongst imported animals. During 1910, 22 cases were detected in Alexandria Quarantine Pens, but no cases were reported in the interior of the country.

“This disease caused a certain amount of interference with trade by closing markets and in some instances with the cultivation of the land, owing to the lameness of cattle caused by this disease. Only three deaths were recorded.”

In connection with this subject it is interesting to note that a Departmental Committee presided over by the Rt. Hon. Sir Ailwyn Fellowes has recently been sitting in England, and the report has just been published. The following quotation from *The Times* of 3rd June last summarizes the general findings of the Committee :—

“It was the uncertainty arising from inability to discover the source and channel from and through which the infection was spread that led to this inquiry ; and although the Committee have not been able to throw light upon any specific case, they have given prominent attention to this aspect of the question, elicited important information, and submitted valuable suggestions with the view of reducing the risk in future.

*Experiment and Research.*

“After referring to the highly infectious and contagious—and non-spontaneous—nature of the disease and enumerating the animals liable to it, the Committee refer to the need for experiment and research into this and other diseases. There is but little exact knowledge even among the greatest veterinary experts as to the nature, origin, and means of transmission of foot-and-mouth disease ; and they feel, therefore, that it is most important to obtain further information on the subject through the medium of special and thorough investigation, experiment, and research, and on this account they welcome the appointment of a Scientific Committee to study the subject in India. Stock-owners will learn with a feeling of relief that the Committee disapprove of the proposal to establish an experimental station for the study of this and other infectious and contagious diseases in this country or on an adjacent island. They maintain rightly that, in spite of all possible precautions, such an institution would be a source of danger to the stock of the country. They hold, however, that mutual benefit might result from the establishment elsewhere of an international experimental station, and they strongly recommend that continental and other countries should be approached to co-operate in this matter.

“The question of preventive inoculation is dealt with in the same thorough fashion. The evidence heard satisfied the Committee that immunization could be effected by the injection of a preventive serum. They suggest that inoculation might be carried out in the case of animals not actually in contact with the disease, or that would be liable to be slaughtered under the existing regulations, but that are within the infected zone. They recognize the danger of indiscriminate use of viruses, and insist upon strict Government control on the ground that operations by other than skilled hands would give rise to serious danger.

*Origin of Outbreaks.*

“The part of the report relating to the means of contamination indicates the thoroughness with which the investigation has been conducted. As the disease does not arise spontaneously the outbreaks, at any rate since 1896, must have ‘been imported’ by mediate contagion.’ The fact that outbreaks in this country have occurred when the disease was most prevalent on the Continent points to the source from which infection has come ; and considering the state of things in several of the continental countries and the constant general traffic between them and Great Britain, the Committee think that the latter is fortunate in having escaped so lightly. The Committee ‘recognize that it is impracticable, even if it is not impossible, to erect an impregnable barrier against the introduction of disease, but it is agreed that the risk is greater with certain articles’ ; they enumerate as most open to suspicion : hay and straw, milk and milk products, hides and skins, heads and feet, carcasses of calves in skins, vaccine seed lymph, hoofs, horns, bones, and other animal offals, persons and their clothing. While admitting that the traffic in some of these articles, such as hides and skins, is too important to be hampered unduly by restrictions, the Committee make various suggestions as to the control and disinfection as would appreciably diminish the risk of spreading either foot-and-mouth disease or anthrax through these commodities. Important evidence was laid before them upon the use of disinfectants, and they conclude that no great hardship would be inflicted were the use of such materials made compulsory.”

This report is specially interesting as insisting on the following main points :—

1. The essential necessity of research ;
2. The value of preventive inoculation in limited areas ;



3. The reservation of the use of viruses to skilled operators ;
4. The impossibility of erecting an impregnable barrier against importation of infection ;
5. The value of disinfection.

Although these principles are insisted on in this case in connection only with foot-and-mouth disease it is legitimate to claim their value as of still wider application so that with very slight modification they may be said to embody the essential principles of sanitary and veterinary organization and defence as it should be applied in this country.

Mr. Littlewood continues :—

*Septicæmia Hemorrhagica.*

“Twenty-one cases were reported during the year in the following mudirias :—

TABLE LXIV.

	Cattle and Buffaloes.	Donkeys.	Total.
Qena Mudiria ... ..	7	3	10
Girga Mudiria ... ..	1	—	1
Beni Suef Mudiria ... ..	7	—	7
Gharbia Mudiria... ..	2	—	2
Menufia Mudiria ... ..	1	—	1
Total ... ..	18	3	21

“No cases were reported during 1910.

“Eighty-four cases of mange were reported during the year in the following governorates and mudirias :—

TABLE LXV.

Cairo Governorate ... ..	73*
Giza Mudiria ... ..	4
Qaliubia Mudiria ... ..	4
Daqahlia Mudiria ... ..	1
Menufia Mudiria ... ..	1
Behera Mudiria ... ..	1
Total ... ..	84

“During 1910, 35 cases were reported : 34 in Cairo and one in Giza.

*Strangles.*

“During the year, five cases in horses were reported from Qena Mudiria (3), Gharbia Mudiria (1), and Behera Mudiria (1) : and one case in a donkey from the Cairo Isolation Hospital.

“In 1910, 16 cases were reported in Cairo, Kantara, and Port Said towns, Gharbia, Menufia, and Minia Mudirias.

*Fowl Typhus and Cholera.†*

“These maladies occasionally destroy a considerable number of fowls in this country. During the last two years this Service has endeavoured to cope with the outbreaks of

\* Of this number, 70 were treated at the Animals' Isolation Hospital at Abbassia.

† It must, however, be admitted that little or nothing is known of the causative factors of fowl diseases, which are probably more numerous than hitherto believed. The above nomenclature can by no means be considered accurate, although for the present it is the one in common application in default of another of more precise and accurate nature.—W.P.G.G.

this disease, but the greatest difficulties are experienced in getting villagers to declare the cases. The question is, however, of considerable financial importance, and will receive from this Service the greatest possible attention.

*Trypanosomiasis.*

“Thirteen cases of this disease were detected during the year : six in horses and seven in camels.

*Trypanosomiasis with Filariasis.*

“Ten cases were detected in camels during the year.

*Filariasis.*

“Four cases were detected in camels during the year.

*Coccidiosis.*

“One case was detected in a bull at Cairo Abattoir during the year.

“No cases of the following diseases were reported in Egypt during the year 1911, viz., Sheep-pox, Swine Fever, Horse-pox, Pleuro-pneumonia, Stiff sickness, Cow-pox Malta Fever.

*Isolation Hospital for Contagious Diseases of Animals.*

“The isolation hospital for infectious and contagious diseases of animals at Abbassia, opened in 1909, continued to be of the greatest use, as the following figures, giving the admissions in 1911, supplied by Mr. Miller, will indicate :—

TABLE LXVI.

Horses	...	...	...	...	...	...	...	...	...	...	...	173
Mules	...	...	...	...	...	...	...	...	...	...	...	6
Donkeys	...	...	...	...	...	...	...	...	...	...	...	11
Camels	...	...	...	...	...	...	...	...	...	...	...	6
Total...												196

DISEASE.	Horses.	Mules.	Donkeys.	Camels.	Total.
Glanders	28	2	—	—	30
Suspected glanders	61	—	2	—	63
Mange and other skin diseases	66	2	2	—	70
Bursattee	3	—	1	—	4
Strangles	—	—	1	—	1
Suspected rabies	13	2	5	6	26
Epizootic lymphangitis	2	—	—	—	2
Total...	173	6	11	6	196
Destroyed	30	2	—	—	32
Discharged cured	137	4	11	6	158
Died	2	—	—	—	2
Sold	2	—	—	—	2
Remaining in Hospital	2	—	—	—	2
Total...	173	6	11	6	196

“In 1910, 130 animals were treated in the hospital. As the number of admissions is on the increase, more accommodation seems to be absolutely necessary.



(ii) CATTLE PLAGUE.

“ During the year, 1,447 deaths from cattle plague were reported in the following governorates and mudirias :—

TABLE LXVII.

Cairo Governorate ... ..	23
Alexandria Abattoir ... ..	6
Damietta Governorate ... ..	1
Aswan Mudiria ... ..	70
Girga Mudiria... ..	162
Assiut Mudiria ... ..	212
Beni Suef Mudiria ... ..	6
Fayum Mudiria ... ..	20
Giza Mudiria ... ..	102
Qaliubia Mudiria ... ..	15
Sharqia Mudiria ... ..	199
Gharbia Mudiria ... ..	321
Daqahlia Mudiria ... ..	152
Menufia Mudiria ... ..	82
Behera Mudiria ... ..	76
Total... ..	<u>1,447</u>

“ This brings the total number of deaths reported in Egypt, since the appearance of the disease in June 1903, to 167,081.

“ The death-rate from the disease in the country during the year was about 0·11 per cent., against about 0·18 per cent. in 1910.

“ 43,049 cattle were serumized in the infected districts during the year.

“ Besides the cases that occurred in the interior of the country, 34 cases were detected in Alexandria—imported animals coming from Syria—of which number 32 occurred in the Quarantine Pens and 2 in the Mex Abattoir.

“ During 1910, 2,500 deaths were reported in the interior of the country, 18 cases in Alexandria Quarantine Pens, 11 in Port Said Quarantine Pens, and 23 in Alexandria Abattoir.

“ In assisting to arrest outbreaks of cattle plague in villages, the use of serum is of great benefit, and is now generally recognized as such.

“ The concealment of the disease by agriculturists is still very prevalent and makes the work of controlling the disease most disheartening and difficult. If owners of animals could only be educated to help this Department in its work, cattle plague and other contagious diseases of animals would more easily be controlled.

*Cattle Plague in the Sudan.*

“ Cattle plague was reported from the following districts in the Sudan during the year :—

Bahr el Ghazal Province,  
Sennar Province,  
Kassala Province,  
White Nile Province.

(iii) ABATTOIRS.

“ No new abattoirs were opened during the year.

“ There are at present 104 towns provided with public abattoirs, distributed as follows :—

Abattoirs worked by Government ... ..	15*
„ „ by Municipalities and Local Commissions ... ..	39
„ „ by Markets Company ... ..	50
Total ... ..	<u>104</u>

\* Including Helwan, transferred to the Municipality of that town from 1st January 1912.

“ Another abattoir is in course of erection by the Department at Qus.

“ The total revenue of the 14 Government abattoirs (apart from Cairo), during 1911, amounted to L.E. 3,079·950 milliemes.

“ During the year, 739,285 animals were slaughtered in the twenty principal abattoirs, against 771,477 in 1910 and 761,038 in 1909. The following is a comparative statement of the different species of animals :—

TABLE LXVIII.

	1911.	1910.	Difference.
Large cattle ... ..	60,916	61,943	— 1,027
Calves ... ..	97,801	108,466	—10,665
Sheep and goats ... ..	567,321	588,537	—21,216
Pigs ... ..	7,180	8,187	— 1,007
Camels ... ..	6,067	4,344	+ 1,723
Total ... ..	739,285	771,477	—33,915 + 1,725
Net difference (decrease)...			32,192

*Cairo Abattoir.*

“ The revenue of Cairo abattoir during 1911 amounted to L.E. 28,935·067 milliemes, distributed as follows :—

	L.E.	Mills.
Slaughtering dues ... ..	26,344	415
Stabling dues ... ..	1,093	635
Sheep market dues ... ..	1,142	417
Tripe shops rent... ..	265	500
Miscellaneous ... ..	89	100
Total... ..	28,935	067

“ In 1910, the revenue of the abattoir amounted to L.E. 30,760, compared with which the income in 1911 shows a decrease of L.E. 1,825.”

The following note on the work at the Cairo abattoir is supplied by Mohammad Effendi Askar, Director of that institution :—

“ The total number of animals slaughtered during the year came to 335,868, of which 1,244 cattle were supplied to the Army of Occupation in Cairo.

“ The following comparative table with that of the last year, shows the number of animals killed and their various classes :—

TABLE LXIX.

	Bulls.	Cows.	Buffaloes.	Camels.	CALVES.			Sheep.	Goats.	Pigs.	Total.
					Cow.	Gun.	Sucking.				
1911 ...	10,329	1,548	7,286	2,695	17,893	2,134	16,653	275,438	324	1,568	335,868
1910 ..	5,763	4,890	8,592	1,786	23,774	3,383	16,940	286,119	751	2,223	354,221
Increase ...	4,566	—	—	909	—	—	—	—	—	—	5,475
Decrease...	—	3,342	1,306	—	5,881	1,249	287	10,681	427	655	23,828

“ Compared with that of the last year, the figures of 1911 show an increase in the number of bulls and camels only and a decrease in all other classes.

“ The number of Sudan cattle killed in the abattoir during the year 1911 was 12,691 against 4,016 during 1910.

“ The decrease in the number of pigs may be attributed to contraband slaughtering outside the abattoir.



*Meat condemned as unfit for Food.*

“The number of whole, half, and quarters of carcasses seized as being unfit for food are tabulated as follows :—

TABLE LXX.

	CATTLE.			BUFFALOES.			CAMELS.			SHEEP.			PIGS.		
	Whole.	Half.	Quarter.	Whole.	Half.	Quarter.	Whole.	Half.	Quarter.	Whole.	Half.	Quarter.	Whole.	Half.	Quarter.
Tuberculosis ... ..	20	37	5	4	11	2	2	5	3	1	—	—	11	9	—
Cyst. Bovis ... ..	104	36	6	2	1	—	—	—	—	—	—	—	—	—	—
Cyst. Cellulosæ ... ..	—	—	—	—	—	—	—	—	—	—	—	—	26	1	1
Emaciation ... ..	2	—	—	—	—	—	—	—	—	13	1	4	—	—	—
Bruised meat... ..	5	3	8	—	—	1	—	—	1	4	—	—	—	—	—
Jaundiced meat ... ..	5	—	—	—	—	—	—	—	—	9	—	—	—	—	—
Cattle plague... ..	10	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Anthrax ... ..	—	—	—	—	—	—	—	—	—	4	—	—	—	—	—
Fevered flesh... ..	2	—	—	2	—	—	1	—	—	2	—	—	—	—	—
Total...	148	76	19	8	12	3	3	5	4	33	1	4	37	10	1

“The percentage of tuberculosis among milch cows this year is 26·82 against 49·16 as compared with last year. The percentage of the same disease in milch gamoos is 9·67 this year and was 9·8 last year ; there were, however, fewer milch animals slaughtered during 1911.

*Organs confiscated.*

“The number of the organs seized and the causes of their destruction are shown in the following table :—

TABLE LXXI.

	LIVERS.				LUNGS.					HEADS.		HEARTS.	
	Tuberculosis.	Distomatosis.	Echinococi.	Cirrhosis.	Tuberculosis.	Filariasis.	P.M. Discolouration.	Pneumonia.	Echinococi.	Tuberculosis.	Cysticerci.	Cysticerci.	Inflammation.
Cattle ... ..	14	722	52	—	374	119	55	—	—	77	214	710	140
Buffaloes ... ..	—	1,147	7	—	82	—	17	—	37	17	—	—	50
Sheep ... ..	—	13,799	15,742	—	—	21,613	7,503	—	370	—	—	—	—
Camels ... ..	5	2	37	—	24	—	17	—	840	—	—	—	—
Pigs ... ..	54	—	14	20	148	—	—	14	30	134	—	6	5
Total...	73	15,670	15,852	20	628	21,732	7,592	14	1,277	228	214	716	195

*Deaths in the Quarantine Parks.*

“The following animals died in the quarantine sheds :—

- 4 cattle of Cattle plague.
- 1 camel of Septicæmia.
- 2 sheep of Anthrax.
- 46 sheep of Sporadic diseases.

*The Income of the Abattoir.*

“This consists of dues collected for slaughtering, also dues from the quarantine parks and from the sheep and tripe markets, and from the rent of the two weighing





(iv) CENSUS OF CATTLE AND BUFFALOES.

“ The following is a comparative table of the census of cattle and buffaloes obtained since 1903 :—

TABLE LXXIV.

Year (August-September).	Cattle.	Buffaloes.
1903	959,669	718,023
1904	605,022	645,796
1905	655,156	708,233
1906	732,537	775,149
1907	778,896	761,486
1908	737,732	750,548
1909	725,116	728,284
1910	672,091	675,392
1911	656,166	657,406

“ This shows a decrease of 15,925 cattle and 17,986 buffaloes in the census of 1911 as compared with that of 1910.

“ Cattle cannot apparently be reared in larger numbers for the meat supply owing to the extension of cotton cultivation and consequent dearness of forage ; however, good working cattle can always be obtained in sufficient numbers for cultivating the land at fair prices (L.E. 20-L.E. 26 per bullock) ; this price apparently does not leave a sufficient margin of profit for the large land-owners, who have during the last few years discontinued breeding cattle.

*Census of Horses and Mules.*

“ During the year the mudiria authorities collected the following figures regarding the numbers of horses, mares, and mules in Egypt :—

Horses	...	...	...	...	...	...	...	...	...	...	...	26,383
Mares	...	...	...	...	...	...	...	...	...	...	...	24,292
Mules	...	...	...	...	...	...	...	...	...	...	...	25,077

(v) IMPORTATION OF ANIMALS AND MEAT.

*Animals imported.*

“ The following are the numbers of animals imported into Egypt during the year 1911, as compared with those of 1910 :—

TABLE LXXV.

	1911.	1910.	Difference.
Cattle ... ..	31,042	33,053	— 2,011
Horses, mules, and donkeys ...	2,703	2,118	+ 585
Sheep and goats... ..	312,373	432,572	—120,199
Pigs, etc. ... ..	1,672	1,514	+ 158
Camels ... ..	46,508	34,310	+ 12,198
Total... ..	394,298	503,567	—122,210 + 12,941
Net difference (decrease) ...			109,269

“Besides the above, the following numbers of cattle, sheep, and camels were received from the Sudan *via* Halfa, which, compared with those of 1910, show an increase of 52,264 :—

TABLE LXXVI.

	1911.	1910.	Difference. (increase).
Sheep and goats ... ..	98,861	62,974	35,887
Cattle ... ..	21,573	5,318	16,255
Camels ... ..	111	7	104
Total ... ..	120,545	68,299	52,246

“ This brings the total number of imports during the year 1911 to 514,843, against 571,866, showing a net decrease of 57,023. It is, however, to be noted that the number of cattle imported shows an increase of 14,244, and of camels 12,302.

“ It is satisfactory to note that the traders from the Sudan are able to successfully establish a cattle trade with Egypt ; as better accommodation is provided for at the different observation cattle stations, and larger veterinary staff organised, a better control will be effected.

“ The cattle trade between the two countries should continue with benefit to both, though much still remains to be done before the trade can be carried out without risks of importing disease into Egypt ; nevertheless, no cattle trade which is of any use to Egypt for food supply can be apparently worked without running risks, and I think it can be safely assumed that the risks incurred by trading with the Sudan will be less than, for instance, trading with Syria.

*Skins from the Sudan.*

“ 14,394 sheep- and goatskins were imported from the Sudan *via* Halfa, and 1,393 bales of hides and skins *via* Suez for transhipment to foreign countries.

*Frozen Meat.*

“ The importation of frozen meat continues by the two undermentioned British firms. During 1911, the following quantities arrived, and compared with those of the previous year show an increase :—

TABLE LXXVII.

NILE COLD STORAGE COMPANY.

	1911.	1910.	Difference.
	lbs.	lbs.	lbs.
Beef ... ..	618,494	568,580	+ 49,914
Mutton ... ..	170,519	204,354	— 33,835
Lamb ... ..	148,506	93,034	+ 55,472
Veal ... ..	25,724	17,290	+ 8,434
Pork ... ..	10,215	18,900	— 8,685
Total... ..	973,458	902,158	+ 71,300

WILLS AND COMPANY.

	1911.	1910.	Difference (increase).
Quarters beef ... ..	8,316	6,648	1,668
Sheep carcasses ... ..	4,796	4,198	598
Lamb „ ... ..	1,100	500	600
Veal „ ... ..	193	184	9
Pork „ ... ..	270	69	201
Sundries (Boxes) ... ..	452	335	117
Total... ..	15,127	11,934	3,193



(vi) SCHOOL OF VETERINARY MEDICINE.

“This institution is slowly and, I think, successfully turning out Egyptian veterinary surgeons, several of whom are doing very good work. Careful supervision, however, of graduates, is most desirable in order that a certain standard of work should be maintained. On 1st January 1911 there were 47 students in the school. One cadet was admitted in January, and eight candidates were admitted in October. At the professional examinations held in May and December, three students of the final year passed the examination and obtained their diplomas. During the year two students of the first year resigned, and two in their third year were discharged. There are at present in the school :—

“6 students in the fourth year

“17                   ,,                   ,,                   third                   ,,

“14                   ,,                   ,,                   second                   ,,

“12                   ,,                   ,,                   first                   ,,

“Of the above, the following are cadets from the Egyptian Army : 1 in the fourth year, 2 in the third year, 1 in the second year, 1 in the first year.

“The total number of veterinary surgeons qualified since the school was opened is 34, of which number 18 are in the Department of Public Health, 7 entered the Sudan Government, 2 the Municipality of Alexandria, 1 the School of Agriculture, 1 the Domains Administration, 1 the Khedivial Agricultural Society, 3 are in private practice in Cairo, and 1 qualified as Doctor of Medicine in America, and is at present practising in Cairo.

“The conduct of the students during the past year has been most satisfactory.”

Mr. Eugene Mason, lecturer on veterinary pathology in the Veterinary School, supplies the following interesting account of the routine work done in the laboratory during the past year :—

“ A systematic examination has been made of all specimens sent for diagnosis, but, records of these examinations have been kept only since September 1911 ; previous to this, results obtained were simply reported.

“The following table shows the number of specimens examined and the results obtained from the beginning of September until the end of December. The specimens were invaluable for teaching purposes :—

*Hæmorrhagic Septicæmia* :—

[illegible]

“ A considerable number of lesions of various kinds, tumours, and animal parasites have been examined, classified, and preserved in the museum for teaching purposes.”

In addition to the above, a considerable number of observations on the experimental treatment of camels for trypanosomiasis, tuberculosis in camels, trypanosomiasis in horses, distomatosis in sheep, coccidiosis in a Cyprus bull, and larvæ of *Linguatula Tænioides* in camels, were carried out, and are dealt with in detail by Mr. Mason in a separate publication (No. 5, 1912).

(vii) VETERINARY-LEGAL CASES.

According to reports received, 349 examinations in veterinary-legal cases have been made by the Veterinary Inspectors of this Department. Of this number, 185 were cases of poisoning, 131 cases of wounds, and 33 were accidents and common diseases.

Returns received from the Chemical Laboratory of the School of Medicine show that 94 organs were analysed for evidence of poisoning, with the result that 73 cases were found to be positive and 21 negative.

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## PART V.—ENGINEERING DEPARTMENT.

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The following is an account prepared by Price Bey, Chief Engineer, of the various works undertaken by the Engineering Section of the Department of Public Health during the past year :—

“*Abbassia Lunatic Asylum.*—In continuation of the programme laid down for the extension of the Abbassia Asylum, plans and particulars for two new sections for 100 patients, together with new offices, were prepared and approved by the Projects Commission, and a sum of L.E. 14,700 was granted by the Government for carrying out the work. The new sections will be completed and occupied early this year, and it is anticipated that the whole of the work, including the new offices, will be finished and handed over within the contract time, namely, 11th June 1912.

“General repairs and painting to the old buildings, at a cost of L.E. 1,000, was commenced, and is now on the point of completion.

“In continuation of the programme laid down for remodelling the existing hospital accommodation, plans and particulars were prepared for one of the proposed new two-storey pavilions to contain 90 beds. The plans have been submitted to and approved by the Projects Commission, and the work will be commenced at an early date. \*

“Considering the state of old buildings and especially the old military hospital, an annual grant is necessary for repairs and painting if the premises are to be kept in a satisfactory condition.

“*Chatby.*—The old buildings at Chatby have been modified and repaired at a cost of about L.E. 250, and are now used as temporary observation and detention wards for people arriving in the country from suspected ports.

“*Infectious Hospital.*—The old pail-system of conservancy at the existing Infectious Hospital at Abbassia has been suppressed and a “water carriage” system with the necessary septic tanks and filters substituted.

“An increased water supply has been provided and a hot water system installed.

“The whole of the buildings and huts have been repaired and re-painted throughout, and temporary mat huts were erected as a provision against a possible outbreak of cholera.

“*Ophthalmic Hospitals.*—Owing to difficulties with the contractor the construction of the Mansura Hospital has been delayed, but the work is again proceeding satisfactorily, and, if no further delay occurs, will be shortly completed.

“The Tanta Ophthalmic Hospital was re-painted and colour-washed during the year.

“*Central Administration.*—The second portion of the Central Stores has been completed, fitted with the necessary equipment, and is now occupied.

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\* Is now in hand (June 1912).

“*Shellal*.—The temporary wooden cattle sheds and sheep pens at Shellal, in connection with the increasing cattle and sheep trade with the Sudan, were completed and occupied during the past year.

“*General Repairs, etc.*—Important repairs, painting, etc., have been carried out during the year to the following buildings :—

Kasr el Aini Hospital,  
General and Infectious Hospitals,  
Public Health Office, residence, and disinfecting station, Port Said,  
Infectious Hospital, Abbassia,  
Alexandria Hospital,  
Health Office and Inspector's house, Ismailia,  
Ophthalmic Hospital, Tanta,

and minor repairs to other hospitals and other buildings belonging to the Department of Public Health in Upper and Lower Egypt.

“*Abattoirs*.—Modifications and repairs for a sum of upwards of L.E. 600 have been carried out to the abattoirs and cattle and sheep markets at Old Cairo ; minor repairs to the Veterinary School, Vaccine Institute, Infirmary, and Serum Institute, Abbassia, as well as to the country abattoirs under the control of the Department in Upper and Lower Egypt, have also been effected.

“*Cemeteries*.—The boundaries of 43 cemeteries have been fixed during the year, the number of boundary posts used being 532, and the cost L.E. 406.

“The boundaries of nine private cemeteries were also fixed, the cost being borne by the various villages. The number of posts used was 49, and the cost L.E. 37.

“*Alexandria Hospital*.—The new wash-house and kitchen at a cost of L.E. 4,008 was completed and occupied during the year.

“Modifications have been made to the pavilion for females by the addition of lavatories, etc., and special provision made by fencing-in compounds and providing movable huts for infectious cases.

“The main drainage of the Hospital has been remodelled. The old percolating channels have been suppressed and a system of 6" and 4" salt-glazed drains have been substituted.

“A commencement was made with the modifications and re-painting of the old surgical pavilion and the final painting and colour-washing of the new surgical pavilion, administration block, and Chief Medical Officer's residence, which will be completed early in 1912.

“*Sanitary Installations* —Plans of sanitary installations to the following buildings were submitted to the Department of Public Health during the year. Modifications were introduced where necessary and the plans finally approved:—

State buildings ... ..	19
Private mosques ... ..	30
Private houses ... ..	26
Baths ... ..	1
“Etablissements Insalubres” ... ..	61

The repairs credit allotted to the Department for 1911 was L.E. 8,648, of which L.E. 2,500 is ear-marked for work in equal shares with the Waqfs Administration for the sanitation of mosques, and L.E. 955 is ear-marked for abattoirs; the balance, amounting to L.E. 5,193, is what remains for carrying out necessary repairs. In the Report for 1909 a list of the buildings belonging to the Department, amounting to an estimated capital value of some L.E. 500,000, was given.



It will be seen, therefore, that the credit for repairs is somewhat inadequate, and amounts to only slightly over 1 per cent. of the capital value. The Department is experiencing considerable difficulty in keeping its buildings in that state of repair which is to be desired. If that is to be achieved a larger credit for repairs will be necessary in future years.

The following is a summary statement of the projets “in hand” for 1911, those “under study,” and those “requiring early study” :—

*Projects in Hand.*

Central Stores ... ..	Re-building of second portion.
Alexandria Hospital ... ..	New kitchen, washhouse and stores, main drainage, accommodation for cholera cases.
Abbassia Lunatic Asylum ... ..	New sections for 60 male patients and for 40 female patients, new offices, conversion of old offices into section for 43 male patients, new roads to south courts.
Abbassia Infectious Hospital ... ..	Installation of water-carriage system, remodelling of drainage, provision of disposal tanks, etc.
Port Said ... ..	Accommodation for suspected cholera cases.
Mansura ... ..	New Ophthalmic Hospital.

*Projects under Study.*

Institute of Hygiene ... ..	Addition of second storey.
Central Stores ... ..	Store for patterns and samples.
Alexandria Hospital ... ..	Two new pavilions for 180 beds ; nurses' quarters.
Minia Hospital ... ..	Accommodation for out-patients.
Qena ... ..	New hospital for 52 beds.
Esna ... ..	New hospital for 30 beds.
Aswan Hospital ... ..	Accommodation for prisoners and lunatics.
Fayum Hospital ... ..	Accommodation for prisoners and lunatics ; accommodation for out-patients.
Beni Suef Hospital ... ..	Administration pavilion and Inspectorate.
Damanhur Hospital ... ..	Accommodation for out-patients.
Province of Gharbia ... ..	Type-plans for Provincial Hospitals.
Abbassia Infectious Hospital ... ..	Accommodation for first class patients.
Zagazig ... ..	New infectious hospital.
Mansura ... ..	New infectious hospital ; village shelters for infectious and contact cases.
Abbassia Lunatic Asylum ... ..	Matrons' quarters ; extended substantial repairs.
Khanka Lunatic Asylum ... ..	Three new sections for 120 patients.
Sohag ... ..	New ophthalmic hospital.
Beni Suef ... ..	” ” ”
Zagazig ... ..	” ” ”
Shebin el Kom ... ..	” ” ”
Damanhur ... ..	” ” ”
Cairo Abattoir ... ..	New cattle sheds ; addition and modifications.
Wasta ... ..	New fifth class abattoir.
Birket el Sab .. ..	” ” ” ”

*Projects requiring Early Study.*

Cairo ... ..	Food laboratory.
Tanta Hospital ... ..	Detention rooms for prisoners and lunatics.
Benha Hospital... ..	„ „ „ „ „ „
Shebin el Kom Hospital... ..	Accommodation for out-patients; accommodation for prisoners and lunatics.
Assiut ... ..	New infectious hospital.
Abbassia Infectious Hospital...	Accommodation for plague cases.
Damanhur ... ..	Disinfecting station.
Shebin el Kom ... ..	„ „
Port Said ... ..	Infectious stables.
Abbassia ... ..	Extension of infectious stables.
Embaba ... ..	First class abattoir.
Faraskur ... ..	Fifth „ „
Serum Institute, Abbassia ...	New stables, stores, ice-rooms.

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## PART VI.—LEGISLATION.

The present position of health legislation, as has been before pointed out, leaves much to be desired, and although some essential steps have recently been taken for the introduction of improvement in certain special particulars, much remains to be done from the point of view of the abolition of useless provisions and in simplifying the routine prescribed for formulating and passing through the necessary stages proposals for fresh legislation.

At the present moment the following are the laws and regulations (compiled to the 31st of December 1911) which govern the relations of the Department with the public and form the basis upon which administrative action is taken. These laws and regulations are applicable to both natives and foreigners alike, with the exception of three decrees and one arrêté (marked by asterisks) which are applicable to natives only.

TABLE LXXVIII.

SUBJECT.	NATURE OF AUTHORITY.
Registration of Births and Deaths ... ..	Decree of 9th June 1891, modified by Decree of 12th March 1898.
Vaccination ... ..	Decree of 17th December 1891.
Practice of Medicine and its Branches ... ..	Arrêté of 13th June 1891.
Pharmacy and Sale of Poisons ... ..	Decree of 15th September 1904.
Assistant Pharmacists... ..	Decree of 20th November 1904.
"Vidange" of Fosses ... ..	Arrêté of 8th November 1886, modified by Arrêtés of 31st July 1887 and 10th June 1910.
Inhumation and Transport of Bodies ... ..	Regulation approved by International Sanitary Council on 15th September 1876, and 26th March and 30th October 1877.
Transfer of Cemeteries in Provinces ... ..	*Decree of 29th January 1894.
Construction of Pillars, etc. ... ..	*Decree of 12th March 1898.
Excavations ... ..	Decree of 26th April 1900.
Sanitation of Mosques and Latrines accessible to the Public... ..	Decree of 1st July 1911.
Prophylactic Measures ; institution of Sanitary Commissions ... ..	Arrêté of 11th May 1895. Under this Arrêté Mudirs and Governors are empowered to issue Arrêtés for local outbreaks of infectious diseases and for protection of water supply.
Special Measures for Plague and Cholera ... ..	Decree of 27th May 1899, modified by the Decree of 18th February 1911.
Transport of Rags in Time of Epidemics... ..	Decree of 10th March 1906.
Enclosure of Waste Lands... ..	Ministerial Arrêté of 15th June 1893 (extended to certain towns by Arrêté of Mudirs and Governors).
Control of Pilgrims on their Return... ..	*Arrêté of 22nd December 1910.
Control of Passengers coming from Infected Countries ... ..	Arrêté of 21st January 1911.

TABLE LXXVIII *a*.

REGULATIONS APPLIED BY BOTH DEPARTMENT OF PUBLIC HEALTH AND POLICE AUTHORITIES.

SUBJECT.	NATURE OF AUTHORITY.
Etablissements Insalubres ... ..	Decree of 28th August 1904 ; Regulation of 29th August 1904.
Prostitution ... ..	Arrêté of 16th November 1906.
Epizootic Outbreaks and Measures to be taken ...	} *Decree of 27th June 1903.
Aggravation of Penalties in Case of Contravention.	
Rabies, Muzzling of Dogs, etc. ... ..	Decree of 24th June 1905.
Abattoirs Regulations... ..	Arrêté of 23rd November 1893 (subsequent Arrêté on the subject).
Cairo Markets ... ..	Arrêté of 7th March 1911.

From this list it will be seen that the field covered is a somewhat large one, although it by no means includes certain provisions which are essential in a sanitary code, such, for example, as the power to make municipal bye-laws—one of the most important provisions required.

In the early days of health administration in this country, sanitary measures were largely carried out by administrative authority and persuasion, but as the organization of the Department became more complete it was necessary that its administrative authority should be based on legal enactments. It is only in this way that permanent progress can be made and sound health administration established in the present stage of this country's development.

#### LEGISLATIVE REQUIREMENTS OF THE DEPARTMENT.

The legislative requirements of the Department are considerable, not only because numerous new branches of work are being opened out, but because the existing laws are for the most part out of date, cumbersome, and inefficient. The present rate of progress is not adequate to the demand, but some advances have been made, and during the year 1911 the following measures were passed and are now in force :—

(1) Assistant Pharmacists Law, which provides for the recognition and training of a class of dispensers, or “aide-pharmaciens.”

(2) The Law on the Latrines of Mosques, or others, accessible to the public.

(3) An addition to the Plague and Cholera Decree, allowing the closure of public markets in case of need.

(4) Sanitary Regulation for the markets and public depots in Cairo.

(5) The Infectious Diseases Law, which had been through most of its stages in 1910 and the early part of 1911, was sent to the Mixed Court of Appeal in November, and at the time of writing has been approved and promulgated in due form.

(6) Births and Deaths Registration Law. The new project, after having been passed by the Legislative Council, was sent to the Ministry of Interior in July 1911 for submission to the Mixed Court of Appeal. It was promulgated on 14th August 1912.



Other legislation now under consideration and passing through various stages is as follows :—

(1) Lunacy Law. The draft law was submitted to the Ministry of Interior in April 1911 and is now under further consideration by the Ministry prior to being submitted to the Consultative Committee of Legislation at the Ministry of Justice.

(2) Unhealthy Establishments. Considerable progress has been made by the Commission which is drafting the new law, and it is hoped that the draft will be shortly ready.

(3) The urgently required amendments to the Pharmacy Law are still under the consideration of the Contentieux.

(4) Cairo Cemeteries. A Commission appointed to examine the question of Moham-medan cemeteries in Cairo is still engaged in discussing this important matter.

(5) Isolation of Animals suffering from Infectious Diseases. A draft regulation had been prepared by this Department and passed to the Ministry of Interior in April 1911. It is now under consideration as an addition to the Decree of 1883 on epizootic diseases.

On the whole, therefore, it must be admitted that some progress has been made during the year under report in the matter of health legislation, especially when consideration is given to the long course of stages through which any new legislation must, under present conditions, of necessity pass.

Apart from those questions above indicated as being the subjects of legislative steps, initial or amended legislation is required in relation to the following matters :—

(1) The practice of medicine and the power of the State with regard to legislative control. This is a somewhat thorny subject, but draft proposals have been made and have been informally discussed with certain representative members of the profession. Further discussion on these lines will undoubtedly be necessary before arriving at a formula which shall be such as can readily receive the support of the profession.

(2) Legislation on the lines of the Food and Drugs Act of Great Britain. This is one of the most urgent questions, and it is desirable to get to work on it as soon as the proposals of the Etablissements Insalubres Committee have defined the field which their new proposals will cover.

(3) A law regarding birkas, providing for the acquisition by Government of such birkas as being the property of private individuals are not filled in within a certain fixed delay.

#### CONTROL OF THE TRADE IN ALCOHOL.

With regard to this matter, attention may be drawn to the fact that, in his Report for 1904, Lord Cromer alludes to the alleged increase of drinking and drunkenness in Egypt in the following words :—

“It is the duty of the Egyptian Government and notably of their British Advisers to study this very difficult question and most carefully ascertain how far the evil has yet gone, and if possible to devise some measures for preventing its extension.”

Such a study presents very serious difficulties, for accurate statistics cannot for the most part be obtained, but most observers agree that while the consumption of alcohol amongst the fellahin has made no progress, amongst the working classes in the towns and amongst young men of the middle class the habit is undoubtedly on the increase. Whatever opinions may be held as to the effects of alcohol in general there can be no doubt that its ill-effects are specially marked in a race unaccustomed to its use ; and where, as in Egypt, its consumption is contrary to the religious tenets of the vast majority of the people, there is more than ever strong ground for a strict control of the trade. There are two provisions which, if introduced, would render a strict control of the trade possible :—

1. A high licence duty of, say, L.E. 20 to L.E. 50 on every drinking shop.
2. The imposition of an excise duty on all alcoholic drinks.

These two measures are not advocated on fiscal grounds, although there may be much to be said for them from that point of view, but on the grounds, firstly, that a licence duty would tend to eliminate a number of lower class establishments in which alcoholic drinks of inferior quality are sold and thereby rendering the supervision of the remainder easier, secondly, that if an excise duty is placed upon locally distilled spirits, distilleries which exist solely for the purpose of manufacturing fraudulent and injurious imitations of well-known brands will be more easily open to detection.

It is believed that the imposition of an excise duty is within the power of the Egyptian Government, and it is possible that the new powers given to the General Assembly of the Mixed Courts, under the amended Article 12 of the Mixed Civil Code, would be sufficient to authorize the licence duty. It is not too much to say that the whole question is one of the greatest importance both from a health and from a social point of view, and therefore merits the careful consideration of the Government.

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## CONCLUSION.

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The foregoing presents in some degree an account of the work of the Department in 1911, and it is hoped that some substantial progress has been made.

The general lines of policy held in view by the Department have been referred to in previous Reports. The chief items may be summarized as :—

(1) Organization of the Department throughout, embracing a scheme of internal sanitary defence descending to the districts and eventually to the villages.

(2) Code legislation of comprehensive and elastic nature.

(3) Prosecution of research on an organized basis.

In carrying on its work the Department has consistently held to the principles involved in this programme, but it has equally consistently met with a difficulty that perhaps exists to a greater extent in this country than in almost any other.

It becomes more and more evident that careful and continued training of individuals to their duties is one of the most essential necessities.

Whatever may be done in the way of paper organization, real efficiency of execution can never be expected unless the personnel employed are as highly trained in the application of their duty as their personal characteristics will permit. In fact, the chief necessity throughout the Service may be summarized in the word "training." New methods are constantly arising, and new problems are constantly requiring to be dealt with by a personnel which perhaps has had little or no experience of these new requirements or methods. And this is true not only of the personnel of the more modest categories, but also of some of those of the higher grades. With the wider development throughout the country of the principles of local government, the questions of water supply, drainage, and conservancy, become questions of the greatest importance, but questions which formed in times that are still recent no part of the school or college training of the native Inspectorate which is called upon to advise and superintend. In the same way the modern duties of District Medical Officers, nurses, sick attendants, barbers, "dayas" (midwives), and disinfectors, all call for that special training which is essential if they are to carry out these duties with competence and accuracy. In fact, the manufacture of trained personnel is one of the most difficult problems with which the Central Administration has to deal. The expansion of ophthalmic work, the method of dealing effectively and humanely with infectious outbreaks, of the protection of infant life and of village sanitation, is all limited by financial considerations apart from the dearth of trained personnel. The fact that the labour and time required for carrying out such training has continuously and consistently to be devoted by the more experienced of the departmental staff illustrates the degree to which special and additional call is made on the time and energies of these officials.

As regards internal organization, the re-establishment of the Accounts Section and of the plague organization have both been steps in the right direction, while the adoption of the "Provincial Councils programme" (*see* page 112) should carry some additional benefits of training and organization into the villages. There still remain further steps to be taken for the purpose of realizing such autonomy as is inseparable from the achievement of economical and efficient administration of the Department.

One of the essential features of the plague organization is that, far from its utility being limited to dealing with such plague as exists, the units are also used for general service in their own areas, and it thus represents the first step towards the realization of that internal sanitary re-organization which all the world agrees is essential to modern life ; while it is

hoped that it corresponds in no small degree with the idea put forward in the Report for 1909 as being the first item in the declared policy of the Department, and with the proposals on which so much stress has been laid by the recent International Conference in Paris.

As regards the elaboration of a public health law something has been done, as is set forth in the chapter on Legislation, but still the aim must remain of achieving at no distant date a complete Public Health Code. The elaboration of such a code will certainly monopolise a considerable portion of the time and labours of whoever may be charged with the duty, for it can be no light effort which is required to bring into a uniform and homogeneous whole such a series of unequal and partial laws and regulations as now exist.

Reference has been made to organized research as the third line along which the efforts of the Department should be concentrated. Limitations of laboratory space and personnel, together with increase of routine work, have continued to delay the achievement of this object, but the addition of another storey to the Institute of Hygiene, now about to be undertaken, and the provision of additional staff, will undoubtedly in some measure remove some of the obstacles that have hitherto stood in the way. The Laboratory Commission referred to on page 119 has been studying the general question of laboratory organization, and it is hoped that on the rendering of its report immediate steps will be taken for organizing research work on a wide and efficient basis.

W. P. G. GRAHAM,

*Director-General.*

9th July 1912.

